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The BULLETIN

of the

VANCOUVER MEDICAL ASSOCIATION

Vol. XVI. JANUARY, 1940 No. 4

With Which Is Incorporated
Transactions of the

Victoria Medical Society

the

Vancouver General Hospital

and

St. Paul's Hospital

In This Issue:

THE TREATMENT OF FUNCTIONAL MENSTRUAL DISORDERS

ECTODERMOSIS EROSIVA PLURIORIFICIALIS

NEWS AND NOTES

VANCOUVER MEDICAL ASSOCIATION
SUMMER SCHOOL, JUNE 25th TO 28th INCL., 1940

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THE VANCOUVER MEDICAL ASSOCIATION

BULLETIN

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EDITORIAL BOARD:

DR. J. H. MACDERMOT

DR. G. A. DAVIDSON DR. D. E. H. CLEVELAND

All communications to be addressed to the Editor at the above address.

VOL. XVI. JANUARY, 1940. No. 4

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VANCOUVER HEALTH DEPARTMENT

STATISTICS, NOVEMBER, 1939.

Total population—estimated	263,974
Japanese population—estimated	8,891
Chinese population—estimated	7,728
Hindu population—estimated	389

	Number	Rate per 1,000 Population
Total deaths	294	13.6
Japanese deaths	4	5.5
Chinese deaths	21	33.1
Deaths—residents only	248	11.1
BIRTH REGISTRATIONS: Male, 230; Female, 178	408	18.8

INFANTILE MORTALITY	November, 1939	November, 1938
Deaths under one year of age	12	15
Death Rate—per 1,000 births	29.4	44.1
Stillbirths (not included in above	17	3
Note: Delayed registrations of deaths under one year occurring prior to 1939 (not included)		30
Delayed registrations of stillbirths occurring prior to 1939 (not included)		20

CASES OF COMMUNICABLE DISEASES REPORTED IN THE CITY

	October, 1939		November, 1939		December 1st to 15th, 1939	
Diphtheria	0	0	0	0	0	0
Scarlet Fever	40	0	31	0	13	0
Chicken Pox	46	0	134	0	94	0
Measles	3	0	2	0	1	0
Rubella	0	0	6	0	2	0
Mumps	8	0	7	0	4	0
Whooping Cough	13	0	14	0	6	0
Typhoid Fever	0	0	0	0	0	0
Undulant Fever	0	0	0	0	0	0
Poliomyelitis	0	0	0	0	0	0
Tuberculosis	26	23	32	18	5	–
Erysipelas	3	0	3	0	2	0
Ep. Cerebrospinal Meningitis	0	0	0	0	0	0

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

	Burnaby	West Vancr.	Richmond	North Vancr.	Vancr. Clinic	Hospitals, Private Drs.	Totals
Syphilis	0	0	0	1	18	31	50
Gonorrhœa	0	0	0	0	62	19	81

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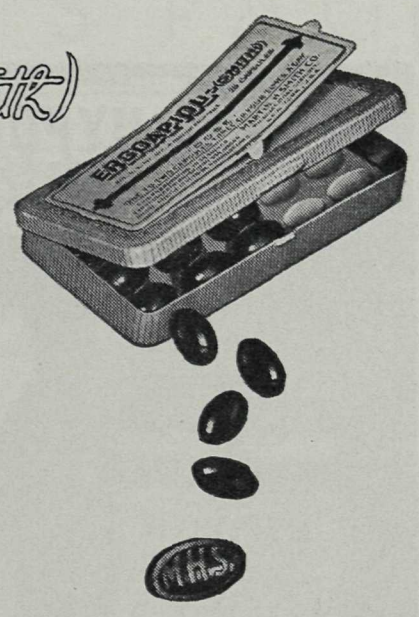

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Calcium Hypophosphite - - - - - - - - 12 grs.
Sodium Hypophosphite - - - - - - - - 8 grs.
Iron Hypophosphite 2 grs.
Manganese Hypophosphite - - - - - - - - 1 gr.
Potassium Hypophosphite - - - - - - - - 1 gr.
Quinine Hypophosphite - - - - - - - - ½ gr.
Strychnine Hypophosphite - - - - - - - 1/16 gr.
With
Vitamin A—4900 int. units
Vitamin D— 800 int. units
Malt 25%
An excellent reconstructive and nutritive tonic.

Dose—One-half to two fluid drachms.

C.C.T. No. 466
MINEROVITE
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Each tablet contains:
1500 international units of Vitamin A
60 international units of Vitamin B_1
35 micrograms Vitamin B_2
200 international units of Vitamin C
400 international units of Vitamin D
20 units Vitamin K
5 mgm. Nicotinic Acid
and Vitamin E, combined with salts of the following mineral elements: Iron, manganese, copper, calcium and phosphorus.

Dose—Three or four tablets daily.

C.T. No. 501
NEUROVIT
E.B.S.

Each tablet contains:
50 international units of Vitamin B_1
0.1 mgm. Nicotinic Acid
0.001 mgm. Riboflavin

Vitamin B_1 is the anti-neuritic vitamin. Nicotinic Acid is a preventive and corrective of sub-clinical pellagra, and Riboflavin is essential to carbohydrate metabolism and muscle tonicity.

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THE EDITOR'S PAGE

EDITOR'S PAGE

In another column of this issue of the BULLETIN we publish an account of an address given by Dr. D. H. Williams before the Vancouver Medical Association at its regular meeting. We regret that Dr. Williams' remarks cannot be published *verbatim,* as he spoke *extempore,* and there is no written paper. What he said, however, we feel should have been heard by every medical man. As is so often the case, most of us are not completely up-to-date in this matter. We are still uttering the phrases, and repeating the time-worn platitudes about venereal disease, prostitution, etc., that were coined many years ago. Modern public health and preventive medicine, not only in Canada, but throughout the whole civilised world, have, through accurate research into facts and carefully-compiled statistics, completely revolutionised the status of our knowledge in these matters. The careful studies made over many years by the League of Nations, through its committees, composed of internationally known authorities on Public Health, have revealed errors in our habits of thinking and speaking: and we are at a point now where only too often the medical practitioner, all unwittingly, and generally quite conscientiously, is actually giving mistaken advice and expressing opinions which are quite at variance with the real truth.

This is deplorable, for various reasons. In the first place, we are actually helping to thwart and hinder the work of those who, with a knowledge far superior to our own, and with the actual responsibility for safeguarding public health, are striving to reduce to a minimum the social evils and threats to social well-being which we, too, are only too anxious to see abolished or mitigated. In the second place, we are helping those subversive and evil forces which prey upon humanity and threaten its progress and well-being. The fact that we do these things in good faith does not excuse us, nor does it alter the harm we may do. Of course, this is not true of all medical men—but it is too often the case; the average man or woman meets the medical practitioner before he or she meets the public health official, and is much more apt to listen to the former—he is the first line of defense. So it is all the more necessary and advisable that he be brought up to date, given the facts of the case, shown where he has been thinking wrongly. There is no doubt, then, what he will do. He will gladly accept this teaching, gladly acknowledge the error of his ways, and gladly work in every way possible with those of his brethren who are charged with prevention of disease, and the spread of knowledge. We can assure Dr. Williams, if he ever had the slightest doubt of it, which we do not believe that he had, that the therapeutic side, the family physician, the general practitioner and the specialist among us, all welcome his talk, and are grateful to him for it. We applaud his frankness and enterprise in coming to us and talking so plainly on this subject.

It is a very hopeful and an excellent sign of progress in our methods of thinking, and a good augury for the future, when the leaders in public health and preventive medicine come, as Dr. Williams and others have done, and talk freely and frankly to us. The Executive are to be commended on their policy of having such addresses. We hope for many more—and the closer liaison thus established between the preventive and curative sides of medicine can do nothing but good to both, and, more important, to the community that we both serve.

* * * *

Listening to the Minutes of the November meeting, which we unfortunately were unable to attend, we were more than delighted to hear that real progress has been made in the establishment of a John Mawer Pearson Lectureship, suggested by Dr. W. D. Keith shortly after the death of our old friend, and now an established feature of our medical life in Vancouver. The following extract will show to what we are referring.

Under the heading of New Business, the establishment of the John M. Pearson Lectureship was discussed, and resolutions were passed: (1) That the Lectureship be established,

and that the Lecture be given by an outstanding member of the Medical Profession on some phase of Internal Medicine; the arrangements concerning the Lecture to be left in the hands of the Executive Committee; (2) That a Fund be established, known as the John Mawer Pearson Lecture Fund, and the income therefrom to be used for the sole purpose of carrying on the Lecture; (3) That sufficient funds be transferred from the general invested funds of the Vancouver Medical Association to bring the John Mawer Pearson Lecture Fund up to $3000.00.

A Special Meeting of the Vancouver Medical Association was held on Wednesday, December 27th, for the purpose of discussing the arrangements for medical services to be given under an agreement with the Vancouver School Teachers' Medical Service Association.

It is good that this has not been allowed to be sidetracked and put off till possibly brighter days, financially speaking. The above extract from the Minutes will show our readers the present state of affairs in this connection, and we hasten to congratulate the Executives and the Trustees on a wise and constructive use of Association funds. Of all words in the English language, "thrift" is the most capable of abuse. The only conceivable value of money, as far as we can see—and here, no doubt, we invite criticism—is that it should be profitably spent. The accumulation of a large balance, which is not being used, and which is merely drawing interest, *i.e.*, removing more active money, more potential fertilizer of social growth, from the possibility of exercising such powers, is, in our opinion, the height of folly and the acme of timidity. We can always save more, accumulate more —but it should be put back into active circulation, to do more work, as fast as it is gathered; and we do not gladly see funds of various kinds accumulating to large proportions and lying idle. We feel that such money might be doing a lot of good work. What are we saving it for, anyway? There is no added security in its possession. Surely the events of the past few years should have taught us this. So we rejoice that at least some of our accumulated store has been put to use.

There are other uses we could think of to which to put other moneys we may possess, but perhaps we have said enough for the present—and, in any case, we do not wish to suggest anything but the utmost trust and confidence in the actions of our Trustees and Executive. They have our confidence in fullest measure, and by this latest action have, we think, justified and increased it.

To return to the Lectureship. This, we believe, is quite the best way we could ever have chosen to honour our departed friend. In a slang phrase, it was just "up his alley." Those who devised it, knew and understood Pearson thoroughly—his passion for research, his love of abstract knowledge, science without the strings of commercial exploitation. In the Elysian fields, where no doubt he is even now exploring some angelic pathology, he will have a more cheerful smile on his face than ever, as he reads this number of the BULLETIN, as we are sure he will do. We have no definite exchanges with the Celestial Medical Association Library, but no doubt the BULLETIN will reach John Mawer Pearson somehow. For it was his creation and his child (at least, it was left on his doorstep by its more or less legitimate parent, Dr. Milburn, and Pearson brought it up), and he is, we are sure, as much interested as ever in its growth and progress. So, as he reads these minutes, published for his behoof, *entre autres,* may he feel that it is our hail to him across the gulf that we, too, must some day span—and that it is our way of saying to him, "Well done, thou good and faithful servant!"

SPECIAL AND IMPORTANT NOTICE

The regular General Meeting of the Vancouver Medical Association, usually held on the first Tuesday in the month, will be held on January 9th, instead of January 2nd. The Agenda for the meeting is enclosed with this number of the BULLETIN.

NEWS AND NOTES

Dr. L. H. Appleby will leave early in the New Year for the Eastern States. He will be away for about eight or nine weeks.

* * * *

Dr. G. F. Strong has left with his family to spend the Christmas holidays in California.

* * * *

Congratulations are extended to Dr. and Mrs. P. Ragona on the birth of a daughter on December 10th.

* * * *

Dr. H. A. Robertson, Lieutenant, and Medical Officer in the 72nd Battalion, Seaforth Highlanders of Canada, left with his regiment for "an unknown destination" on December 15th. Dr. Robertson is the first member of the Vancouver Medical Association to leave for active service abroad, in the present war, and we wish him Godspeed, and the very best of luck.

* * * *

We are very glad to report that Miss Firmin, for many years the Librarian of the V. M. A., who has been seriously ill with pneumonia in the Vancouver General Hospital, is making steady improvement, although still confined to hospital.

* * * *

Dr. E. J. Gray, who has been confined to hospital for some time, is very much better, and has been able to return to his home. He expects to be back in his office early in February.

* * * *

Dr. H. H. Milburn expects to leave for a few weeks' holiday early in the New Year.

* * * *

Dr. and Mrs. J. M. Hershey are receiving congratulations on the birth of a daughter on December 1st at the Kelowna General Hospital. Dr. Hershey, formerly of the Peace River Block, is now in charge of the District Health Unit.

* * * *

Dr. J. A. Street of Woodfibre has been appointed Medical Health Officer for Woodfibre and surrounding district, and School Health Inspector, in place of Dr. E. K. Hough, rescinded.

* * * *

Dr. John A. MacDonald was appointed a Marriage Commissioner for the registration district of Anyox, with offices located at Kincolith, in place of Dr. D. J. MacDonald, who has left the district.

* * * *

Dr. A. K. Haywood and Mr. Whittaker are to consult on proposed site and plans for a new hospital in Penticton.

* * * *

There has been a good deal of activity in St. John's Ambulance work in the Okanagan; two classes of over a hundred have taken examinations in Penticton, one in Kaleden and one in Oliver.

* * * *

Dr. Alan Beech of Salmon Arm visited the office while in Vancouver on a short vacation.

* * * *

We are pleased to note that Dr. M. J. Keys of Victoria has recovered sufficiently from the fracture of his ankle to contemplate some winter golf.

* * * *

Dr. A. G. MacKinnon has taken over the Hospital at Queen Charlotte City, Dr. D. T. R. McColl having left for the East.

* * * *

Dr. P. S. Tennant of Kamloops has left for Calgary to join the 16th Field Ambulance.

The December meeting of the North Shore Medical Society took the form of a dinner at the Olympic Club. The meeting was largely attended, and Dr. M. W. Thomas, the Executive Secretary, was the guest on this occasion. Dr. R. V. McCarley, President, was Chairman.

* * * *

Dr. H. A. Whillans of Victoria has been assisting Dr. G. A. Lawson of Port Alice.

* * * *

Dr. Ralph S. Woodsworth has returned from England and is relieving Dr. J. C. Poole of Wells, while the latter is on vacation.

* * * *

Dr. W. B. McKechnie of Armstrong has been visiting Vancouvr and Victoria.

* * * *

Dr. W. J. S. Millar is carrying on the practice at Blue River.

* * * *

Dr. John Piters of Vancouver has recently returned to open offices, confining his practice to Pædiatrics.

* * * *

Dr. J. E. Whiting is associated with Dr. W. E. Austin at Hazelton.

* * * *

Dr. Donald W. Beech, who has practised for several years at Langley Prairie, has taken over the practice at McBride.

* * * *

Dr. J. C. Thomas, who is well known to the profession in this province, has established himself in Vancouver and will confine his practice to Internal Medicine and Neurology.

* * * *

Dr. A. P. Miller of Port Alberni, while in Vancouver recently, attended the Rotary Ice Carnival.

* * * *

Five Port Alberni doctors were rushed to attend the injured when a logging train, carrying men to work, crashed through a 50-foot trestle.

* * * *

Dr. T. Dalrymple of Vancouver spent a week-end on the Island. He managed to bag several ducks.

* * * *

Dr. W. E. M. Mitchell of Victoria has been appointed Surgical Specialist of the Aldershot Command. He is now Major, R.A.M.C.

* * * *

Congratulations are in order for Dr. and Mrs. Norman C. Cook of Victoria, on the birth of a son.

* * * *

Dr. F. M. Bryant of Victoria has left for the south for one month's holiday.

* * * *

Dr. G. G. B. Buffam has come to Victoria and taken over the office of Dr. C. A. Watson, who is on active service.

* * * *

The Annual Dinner of the Victoria Medical Society was held at the Union Club on Saturday, December 9th. The feature of the evening was a "broadcast" over station "TWAG." A very pleasant evening was enjoyed by the excellent turnout of members and guests.

DR. C. A. DRUMMOND

We regret to record the passing of Dr. Charles A. Drummond of Ashcroft, who at the age of seventy-two finished a useful life in practice.

Dr. Drummond had recently gone to Ashcroft to live with his son, Dr. W. A. Drummond, who is now located at Salmon Arm in association with Dr. Alan Beech.

Dr. Drummond has carried on the practice at Ashcroft during the past year. He was born in Meaford, Ont., was a graduate of Trinity Medical School in Toronto, and practised for many years at Meaford, and latterly at Conquest, Sask.

Dr. W. A. Drummond has the sincere sympathy of the profession in the loss of his father.

LIBRARY NOTES

RECENT ADDITIONS TO THE LIBRARY.

Nomenclature and criteria for diagnosis of diseases of the heart, 1939. (Published by the Criteria Committee of the New York Heart Association.)
Intrduction to Dermatology, 10th ed., 1939, by Norman Walker and G. M. Percival.
Introduction to Medical Mycology, 1939, by G. M. Lewis and M. E. Hopper.
Textbook of Clinical Neurology, 4th ed., 1939, by I. S. Wechsler.
Primer of Allergy, 1939, by Warren T. Vaughan.
Cæsarean Section, 1939, by C. McIntosh Marshall.
Problems of the Ageing, 1939, ed. by E. V. Cowdry.

FROM THE NICHOLSON FUND.

Story of Surgery, by Harvey Graham, 1939.
Priests of Lucina, the story of Obstetrics, by Palmer Findley, 1939.

The Library Committee also acknowledges with many thanks the following additions, which were gifts.
Atlas of Congenital Heart Disease, 1936, by Maude E. Abbott.
Occupational Disease Symposium, Northwestern University School of Medicine, 1939.
Transactions of the Association of American Physicians, 1939.

Vancouver Medical Association

NEW YEAR MESSAGE FROM THE PRESIDENT OF THE VANCOUVER MEDICAL ASSOCIATION

May I, speaking for the Executive of the Vancouver Medical Association, extend to the readers of the BULLETIN the compliments of this New Season.

Since we have survived the strain of succeeding crises and the actual outbreak of war and the initial stages of this rather unusual war, we are somewhat prepared for what may be a new year of trying times and circumstances, requiring many changes and readjustments. May these be met with the same spirit as during the last war.

A. M. AGNEW.

* * * *

The following were elected members of the Vancouver Medical Association at the General Meeting on November 7th: Drs. R. A. Gilchrist, J. S. Kitching, E. B. Trowbridge, R. A. Walton, L. G. Wood; Associate members: Drs. Ivan F. Martianoff and John M. McDiarmid.

British Columbia Medical Association

(Canadian Medical Association, British Columbia Division)

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

A MESSAGE FROM THE PRESIDENT

As the end of the year approaches one's thoughts turn to the ancient Roman deity, Janus, who had two faces—one looking towards the front and one in the opposite direction.

In the affairs of our Association this is an appropriate time to cast a backward glance over the road by which we have travelled. The outbreak of war is an event that overshadows all else in importance, to which all other interests and events are subordinates. This event has far-reaching implications for our profession, both in this Province and in Canada as a whole. The acceptance by the Dominion Government of the offer made by the Canadian Medical Association to advise in the matter of medical service to the military and the civilian population and to perform any other functions that properly come within the scope of the profession's activities is a step of far-reaching importance. The profession may well be proud of this honour; but equally will it be animated by a determination to measure up to the responsibilities implied, and the sense of duty required for their proper performance.

The future has many problems—known and unknown—which are the concern of our standing committees and our membership as a whole. But given co-operation and goodwill these may be faced with confidence.

Cordial Christmas and New Year greetings to all.

Fred M. Auld.

COUNCIL OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF BRITISH COLUMBIA

A MESSAGE FROM THE PRESIDENT

Approaching the New Year, we once again find our world tightly in the grip of another international conflict at arms—this time of a type wholly beyond the comprehension of most of us—with the combatants—like dogs—watchfully ignoring each other.

Circumstances of the past few years have welded our profession into a harmonious unit to a degree never before known amongst us, and as I survey such a large part of the world—peopled by fellow creatures much like ourselves—burdened under the yoke of perpetual hatreds barnacled with the habit of mistrust, it is with deepest thankfulness that I sense the feeling of concord in the hearts of my professional colleagues in British Columbia.

It is my hope for 1940 that we may continue to submerge our natural tendencies to steer our respective ships by the fixed star of individual self interest, and that we may, in the troublous year which would appear to lie ahead, work together with the same spirit of mutual confidence and trust which you have at all times exhibited during the past few years, and in the acknowledgment of which I tender each of you, on the behalf of my Council, my grateful thanks.

Lyon H. Appleby.

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THE TREATMENT OF FUNCTIONAL MENSTRUAL DISORDERS

DR. A. E. TRITES

The modern treatment of functional menstrual disorders is based upon a knowledge of the physiology of menstruation and of the various sex hormones concerned in uterine hæmorrhage. Typically the bleeding occurs from a disintegrating endometrium which has undergone a definite preparation as a result of the development of a Graafian follicle, ovulation and consequent corpus luteum formation in the ovary. The sum total of these changes constitutes a menstrual cycle. Since the essential function of the female genital apparatus is reproduction, and menstruation occurs only when this function has been thwarted, the actual bleeding phase of the cycle has therefore a negative significance, being, in a sense, an epiphenomenon or anticlimax.

Two inter-related groups of changes occur to complete the normal reproduction or menstrual cycle; first, those occuring in the endocrine glands (anterior pituitary and ovary), and second, those occurring in the endometrium. The anterior lobe of the pituitary, the so-called "motor" of the sex glands, stimulates the ovary and maintains ovarian function. These anterior pituitary hormones are thus known as gonadotropic and produce two main series of effects in the ovary. First, those produced by the follicle-stimulating factor (formerly known as Prolan A) and then those produced by the luteinizing factor (Prolan B). Whether these are two distinct and different hormones has not as yet been definitely proven, but certain experimental evidence would suggest it. The follicle-stimulating factor causes the primordial follicle of the ovary to develop into a mature Graafian follicle which discharges its ovum on or about the fourteenth day of the cycle. The luteinizing factor then transforms the granulosa cells which line the collapsed follicle into a corpus luteum. As a result of this activation by the gonadotropic hormones of the anterior pituitary, the ovary in turn elaborates its own hormones: first, œstrogen (œstrin, follicular hormone, etc.), which is a product of the cells of the Graafian follicle; and second, progestin (progesterone, corpus luteum hormone), a product of the cells of the corpus luteum. Oestrogen causes the endometrium to grow or proliferate, and progestin causes the endometrial glands to secrete and at the same time transforms the endometrial stroma into decidua-like cells.

Fluhmann[1], for descriptive purposes, considers the menstrual cycle as falling into six phases, beginning with the third day:

(1) The stage of regeneration (3rd–5th days). During this time the desquamation of the epithelium terminates, healing begins and the new follicle develops in the ovary.

(2) The pre-ovulatory state (6th–14th days) is characterized by the growth and development of the Graafian follicle, and the proliferation of the endometrium.

(3) Ovulation—rupture of the follicle.

(4) Post-ovulatory stage (14th–25th days) when an active corpus luteum develops in the ovary, and the endometrium is influenced by progestin to produce the typical secretary changes.

All of the foregoing stages are essential for the implantation of the fertilised ovum and are designed for pregnancy. If fertilisation fails to occur, the following phases ensue to complete the cycle:

(5) Pre-menstruation stage (25th–28th days). The corpus luteum begins to degenerate, and changes in the endometrium appear which precede the advent of desquamation.

(6) The menstrual stage (1st–4th days) when disintegration of the endometrium and bleeding occurs.

Phase	Regeneration	Pre-ovulatory	(Ovulation)	Post-ovulatory	Pre-menstrual	Menstrual
Approximate Day	3 – 5	6 – 14	14	14 – 25	26 – 28	1 – 4
Ovary	Growth and maturation Graafian follicle		Ovulation	Active Corpus Luteum	Degeneration of corpus luteum	
Endometrium	Repair	Proliferation		Secretion	Leukocytes Vaso-Constriction	Desquamation
Oestrogenic Hormones	Progressive increase in blood and urine		Peak of Concentration	Diminution	Secondary rise (?)	
Progestin	Absent			Present	Absent	
Uterine Contractions			Increased			Increased

Let us consider in greater detail the histologic changes which occur in the uterine mucosa. The endometrium is composed of two well-defined layers. The superficial layer is known as the *stratum functionale* which undergoes the various cyclic changes in response to hormonal stimulation. The deeper layer, the *stratum basale,* remains practically unchanged at all stages of the cycle, and from it the regeneration of the *stratum functionale* occurs after menstruation, pregnancy, or the operation of curettage.

With the cessation of the menstrual flow the *stratum functionale* begins to develop in response to œstrogenic hormones produced by the growing follicle. This is the stage of proliferation—the mucosa increases in thickness, the glands become larger and more tortuous. During the post-ovulatory phase the endometrium undergoes the characteristic changes of the stage of secretion under the added influence of progestin. The endometrium becomes still thicker and is soft and œdematous. Secretory activity within the glands is evident. The deeper glands become dilated, convoluted and serrated. The stromal cells enlarge to resemble decidual cells. Accompanying these changes is a marked vascularity and late in this stage there is a definite leukocytic infiltration. Beginning necrosis terminates this stage, and menstruation now sets in. The stage of regeneration begins very soon, probably before the menstrual flow ceases. The loss of tissue during menstruation may be regarded as an ischæmic necrosis due to vasoconstriction.

Though the correlated series of events in the ovary and uterus during the menstrual cycle are well known, the actual cause of menstruation itself has not been satisfactorily explained. As a result of his experiments with the Macacus Rhesus monkey, Allen[2] attributed menstruation to be due to a temporary cyclic reduction of the amount of œstrogen available in the body. However, when a prolonged daily injections of œstrogenic substances into castrated women or monkeys is made, bleeding occurs during the period of administration. Also, the use of large doses of œstrogen in the late post-ovulatory phase fails to prevent the onset of normal menstruation. On the other hand, it has been definitely shown that degeneration of the corpus luteum is associated with the onset of menstruation. A premature menstruation may be induced by destruction of the corpus luteum in the course of an operation. It is also known that the administration of progestin will delay a

menstrual period. A few days after the progestin is discontinued bleeding occurs. As an explanation for the degeneration of the corpus luteum it has been suggested that the high peak of œstrogen concentration reached soon after ovulation has an inhibiting effect on the anterior pituitary, the corpus luteum, therefore, receiving insufficient stimulation, undergoes degeneration and menstruation occurs. The mechanism by which the deprivation of hormones may set up the disturbance of the endometrial blood vessels is still unexplained. It may be due to the toxic action of certain sterols derived from the œstrogens.

In addition to the normal type of menstrual cycle, in which the endometrium exhibits the various changes just described, it is now well known that another type, unaccompanied by ovulation and therefore not preceded by the usual secretory changes in the endometrium, may occur. This is known as anovulatory menstruation. As shown by Corner[3] and Hartman[4], this phenomenon is of frequent occurrence in monkeys. Clinically, the bleeding is in no wise distinguishable from "normal" menstruation. Such a variety of menstruation may be quite rhythmic and regular. It probably occurs quite frequently at puberty, at the menopause, and also in certain cases of sterility. Novak[5] believes that functional menorrhagia is frequently associated with an anovulatory mechanism. Its existence may, of course, be determined by a microscopic examination of the endometrium just before menstruation. Absence of secretory changes in the endometrium implies failure of ovulation.

Let us now briefly consider the nature and origin of the various sex hormones which are so vitally concerned in the reproductive process. They may be considered as falling into two main groups: first, the gonadotropic substances which stimulate the function of the ovary; second, the ovarian hormones which act on the accessory sex organs.

Gonadotropic Hormones

Three main groups with different actions may be described:

(1) Anterior Pituitary Gonadotropic Hormones,
(2) Chorionic Gonadotropic Hormone, and
(3) Equine Gonadotropic Hormone.

The close association of the anterior hypophysis with sexual functions has long been known. The operation of removal of the pituitary in various laboratory animals is followed by atrophy of the sex organs. The administration of fresh extracts of the anterior pituitary gland in immature female rats or mice causes a marked increase in size of the ovaries with the development of large numbers of Graafian follicles and corpora lutea. These changes lead to the production of œstrogenic hormones which ,in turn, induce a marked growth in the uterus and the development of secondary sexual characteristics. As suggested previously, two factors of the anterior pituitary hormones have been demonstrated—a follicle-stimulating hormone and a luteinizing hormone. The primary use of these preparations clinically is to stimulate follicle growth and development. The commercial preparations are chiefly "soup-like" extracts of the pituitary glands of sheep and cattle.

Chorionic Gonadotropic Hormones

In 1928 Aschheim and Zondek[6] announced that the urine of pregnant women contains large amounts of gonadotropic substance, and that its presence would serve as an accurate test for pregnancy. This gonadotropic substance has also been found in the blood, placenta, amniotic fluid and other tissue fluids during gestation. It was at once considered that this was a pituitary principle, since it produced somewhat the same effects in the ovaries of immature rodents as the true anterior pituitary extracts. However, a comparative study of the respective changes induced by the two substances showed that there was a significant difference in the effects. Accordingly, the gonadotropic hormone of pregnancy was called the anterior pituitary-like hormone by some. It is now considered that it is manufactured in the placenta.

The chorionic hormone does not stimulate follicle growth in women. On the contrary, it may produce atresia of the follicles. Since this hormone was found to produce excessive luteinization in the ovaries of some animals, it was thought that it might be useful in inducing similar effects in women. However, the human ovary does not respond in this way, as has been repeatedly shown by the studies of Hamblen.

Equine Gonadotropic Hormone

In 1930 Cole and Hart reported that the blood of mares in the mid-period of pregnancy contained a large amount of a gonadotropic hormone. Present evidence indicates that this hormone not only differs from the human chorionic hormone but is present in greater concentration. It has been found to be capable of inducing ovulation in some species, and recent studies of Davis and Koff[7] suggest that the hormone is capable of inducing ovulation in women, but this requires further corroboration. Should it prove true, this hormone should be of considerable value.

All gonadotropic hormones are standardized by a modification of the Aschheim-Zondek test and the dosages expressed in rat units. The gonadotropic hormones exert no recognizable effects when given orally. They are administered by the intramuscular route.

The Ovarian Hormones

The œstrogenic hormone is primarily a growth hormone, since its action is to promote the development of the accessory sexual organs. It not only causes proliferation of the endometrium, but also produces enlargement of the uterus, the mammary glands, and stimulates uterine contractions.

Biochemists have shown that several allied chemical compounds may be grouped under the inclusive term œstrogenic substances. Three of these have been isolated in pure form, viz.:

Oestrone (ketohydroxyœstrin);
Oestriol (tri-hydroxyœstrin);
Oestradiol (di-hydroxyœstrin).

It is now believed that œstradiol is the true follicular hormone and that the others are excretion products. Oestradiol is by far the most potent, and has been isolated from follicular fluid. Commercially these preparations are manufactured from pregnancy urine or from the placenta. The familiar emmenin is œstriol glucoronide.

The standardization of œstrogens is conducted with the Allen-Doisy test, which consists of the induction of œstrus changes in the vaginal mucosa of castrate rats or mice. The international unit of œstrone is 1/10,000 of a milligram. While the international unit for œstradiol benzoate has the same mass, it is considerably more potent and is a different chemical entity. Much confusion has arisen from the many and varied trade names under which the œstrogenic preparations are dispensed, and the fact that there are two international units of different potency further complicates the picture.

In addition to the natural œstrogens, a new synthetic œstrogen, di-ethyl stilbœstrol, has appeared on the scene. It was isolated by Dodds and Lawson in 1938. Its œstrogenic activity is about two and a half times as great as œstrin. It has the further advantage of being highly effective by mouth. Recently, several British investigators have affirmed the idea that stilbœstrol can replace the natural œstrogens in all their therapeutic applications. Some caution must be used in the administration of stilbœstrol, since in large dosage or prolonged use it may cause gastric irritation with nausea and vomiting. Moreover, the appearance of albuminuria and œdema have been noted in a few instances following its use. Thus it would appear that it has the property of producing a renal irritation also.

To clarify the comparative potency of the various preparations, we thus may say that œstradiol preparations are from 5 to 10 times as potent as œstrone preparations, and that stilbœstrol is 2.5 times as potent as œstrone. The rat unit used by some companies is approximately five times the strength of the international unit.

Turning now to the corpus luteum, it should be noted that it produces œstrogen as well as its specific hormone, progestin. In addition, the preliminary action of œstrogenic substance is necessary before progestin can induce its characteristic effect in the endometrium. This sequence was described by Hisaw as the "One-Two" reaction in the endometrium. Progestin is responsible for the safe nidation of the ovum, and tends to inhibit uterine contractions. Progestin has been isolated in crystalline form, and is now manufactured synthetically from the soya bean. It is so standardized that one international unit is the equivalent of one mgm. of crystalline progestin.

Venning and Brown[8] have shown that progestin is excreted in the urine in the form

of the inactive compound pregnandiol glucoronidate, and have shown that the amount of pregnandiol excreted is an index of progestin activity.

Below is given a table of the various commercial preparations of the sex hormones which are available in Canada.

COMMERCIAL PREPARATIONS OF GONADOTROPIC HORMONES

1. Anterior Pituitary Gonadotropic Hormone.
   - A. Gonadotropic Hormone, formerly Maturity Factor (Ayerst, McKenna & Harrison).
   - B. Preloban (Winthrop).
2. Chorionic Gonadotropic Hormone.
   - A. Antuitrin-S (Parke, Davis & Co.).
   - B. A.P.L. (Ayerst, McKenna & Harrison).
   - C. Follutein (E. R. Squibb & Sons).
   - D. Gonan (B.D.H.).
   - E. Korotron, formerly Antophysin (Winthrop).
3. Equine Gonadotropic Hormone.
   - A. Gonadin (Cutter Labs.).
   - B. Serogan (B.D.H.).

COMMERCIAL PREPARATIONS OF OESTROGENIC HORMONES

1. For intramuscular injection:
   - A. Amniotin (E. R. Squibb & Sons
   - B. Oestrone (Abbott). } Oestrone.
   - C. Theelin (Parke, Davis & &Co.).
   - D. Oestroform (B.D.H.).
   - E. Progynon-B (Schering Corp.). } Oestradiol Benzoate.
2. For oral administration:
   - A. Amniotin (E. R. Squibb & Sons).
   - B. Emmenin (Ayerst, McKenna & Harrison).
   - C. Estriol (Abbott).
   - D. Progynon-DH (Schering Corp.).
   - E. Theelol (Parke, Davis & Co.).
3. For oral or intramuscular administration:
   - A. Stilbœstrol (B.D.H.).
   - B. Stilbœstrol (E. R. Squibb & Sons).
   - C. Oestrobene (Ayerst).
4. For intravaginal application:
   - A. Amniotin Pessaries (E. R. Squibb & Sons).
   - B. Oestroform Pessaries (B.D.H.).
   - C. Progynon-DH Suppositories (Schering Corp.).
   - D. Theelin Suppositories (Parke, Davis & Co.).
5. For topical application:
   - A. Progynon-DH Lanol (Schering Corp.).

COMMERCIAL PREPARATIONS OF PROGESTIN

- A. Lipo-Lutin (Parke, Davis & Co.).
- B. Progestin (Eli Lilly & Co.).
- C. Progestin (B.D.H.).
- D. Proluton (Schering Corp.).

Discussion of the sex hormones would not be complete without reference to the androgens or male sex hormones, which have created much interest among endocrinologists recently. Two chemical substances have been isolated—androsterone from urine, and testosterone from testicular tissue. The androgens are chemically closely related to the œstrogens, and, curiously enough, androsterone is especially abundant in pregnancy urine. Physiologically, as might be expected, the androgens are antagonistic to the œstrogens—presumably through their effect on the anterior pituitary. Thus they have the properties of causing a cessation or delay in the menses, producing an atrophy of the endometrium and tending to produce masculinization of the external genitalia. Though several favourable reports have been presented of their clnical use in such conditions as menorrhagia and dysmenorrhœa, present preparations on the market are much too expensive in the dosage required to be of practical use at this time, but it may well prove that many of the dysfunctions of menstruation may prove amenable to therapy with the male sex hormones.

All of the sex hormones are sterols and are closely related to cholesterol in structural formula.

In the investigation of menstrual disorders, we must remember that many of them are not primary conditions, but are secondary to systemic or pelvic diseases. All such patients, therefore, should receive a careful general and pelvic examination. In many, special procedures, such as a complete blood count, basal metabolic rate, X-ray of sella turcica, visual fields, and sugar tolerance tests, may be indicated.

Apart from the useful Friedman modification of the Aschheim-Zondek test, we have not as yet local laboratory facilities for the special biologic tests for hormone assays in the blood and urine. Many of these are expensive and time-consuming to perform. Doubtless in the not too distant future such tests will be simplified and thus made available for the laboratory of the average general hospital. In the meantime, however, two relatively simple methods are available as a guide in the study of menstrual disorders. The first is the careful use of a calendar. By this simple means a doctor with a knowledge of the physiology of menstruation can often make an accurate estimate of the endocrine disturbance involved. A small calendar card may be furnished to the patient so that she may mark the days of menstruation and also indicate thereon any abnormal bleeding or other symptoms. Secondly, since we have seen that the endometrium reflects the functional activity of the ovaries, a histological examination of the uterine mucosa is often of considerable value. This is especially true in the investigation of functional uterine hæmorrhage, amenorrhœa and sterility. While a thorough curettage under anæsthesia provides the most information in such cases, the necessary hospitalization and expense involved are disadvantageous. An endometrial biopsy may be readily obtained as an office procedure, using either a very small curette or the newer suction curettes such as those of Novak or Randall. Naturally, strict aseptic technique must be employed and the portio of the cervix and cervical canal should be painted with an antiseptic solution as a preliminary. The specimens are best obtained from fairly high up on the anterior and posterior uterine walls. The procedure should be timed so as to furnish the most information—for example, when one suspects deficient corpus luteum activity the specimen should be taken about a week before an expected menstruation. The specimen should be immediately placed in 10% formalin solution and the date of the last menstrual period furnished to the pathologist. In cases where carcinoma might be present such an examination is, of course, inadequate and may be dangerous. The suspicion of carcinoma demands a complete and careful curettage.

After this somewhat lengthy preamble, which, however, I believe is necessary to an understanding of the factors involved in treatment, let us now turn to the consideration of the therapy of some of the more common disorders of menstruation. I would here like to emphasize that one should spare no efforts to be sure that the disorder is truly a functional one. It is probable that quite a large percentage of indifferent results in endocrine therapy is due to a faulty diagnosis.

Dysmenorrhoea.

Essential or primary dysmenorrhœa has proved, through the years, to be one of the most baffling symptom-complexes which fall to the lot of physicians to alleviate. No definite anatomical disturbance is associated with this condition, though not infrequently a hypoplastic anteflexed uterus of the so-called infantile type may be present. The immediate cause of pain would appear to result from excessive spasmodic contractions of the uterine muscle. Experimentally the œstrogens initiate rhythmic uterine contractility and sensitize the myometrium to pituitrin, whereas progestin causes a diminution or quiescence of uterine muscle activity. However, there is no basis to substantiate the theories that painful menstruation may be due either to an excess or deficiency of either œstrogen or progestin. Whatever the mechanism for its causation may be, it is certain that constitutional and psychogenic factors are of prime importance in the development and perpetuation of dysmenorrhœa. In treatment, therefore, a serious attempt to regulate the patient's mode of life in respect to diet, exercise, rest, bowel function, and so on, should be made. Reports from various schools have particularly stressed the importance of special exercises during the early years of menstruation. The mental attitude of the patient is also of importance. Frequently a discussion with an explanation of the significance of menstruation is helpful. Underlying fears and anxieties should be removed, and in this connection the familiar picture of the over-solicitous mother should be remembered.

The drugs used in the past and even at present in the treatment of this complaint are legion, and their very number bespeaks their inefficiency. Since dysmenorrhœa is a symptom, and because of the wide range in the individual sensitivity to pain, the estimation of the efficacy of any particular drug or treatment is especially difficult. Undoubtedly many of the favourable results must be put down to suggestion.

During the actual attack of pain, belladonna, with its chief alkaloid, atropin, has been used for years with some degree of success. Phenobarbital may be combined with the belladonna. The various combinations of aspirin with or without codeine are of value. The use of benzedrine sulphate has recently been reported, with effectual results in more than 50% of the treated subjects.

With the advent of potent endocrine preparations much hope was entertained for their successful use in this troublesome complaint. Although a fair percentage of good results have been reported with various types of hormones, the conclusions in general have not been very convincing. Israel[9], in a careful study of the results of treatment following the use of œstrogenic and gonadotropic hormones, found the results of therapy disappointing as a whole. On the other hand, Watson[10] reported almost 50% complete relief of pain in cases treated with the placental extract emmenin. My experience with this drug would suggest that it is not effective frequently in dysmenorrhœa, but when it does prove helpful, the relief of pain is often dramatic. Theoretically, œstrogenic therapy should be of value in cases associated with hypoplasia of the uterus, and the evidence of reports would seem to support this contention.

On a physiological basis, progestin should prove of considerable value, since it has the property of relaxing the uterine muscle. A number of reports have accrued, generally favourable. My personal experience is that progestin is usually valuable given in doses of 1 to 2 mgm. during the few days immediately preceding menstruation. It would naturally be assumed that the relief obtained would be of temporary value only. However, I have been impressed in a few instances with the fact that the menstrual pain was thereafter never severe. A recent article by Kurzrok and Livingston[11] reports their similar experience.

Dilatation of the cervix still remains a popular method in the treatment of severe dysmenorrhœa, though it has been shown that cervical obstruction must be a rare cause for pain. From reports submitted, apparently 40% to 60% of patients are relieved by this procedure, though the relief may only be temporary.

Finally, the operation of resection of the superior hypogastric plexus may be considered. In the absence of other reasons for performing laparotomy, this would seem to be a major procedure whose merits as yet have not been completely evaluated.

Functional Amenorrhoea.

Functional amenorrhœa may be primary in which menstruation has never occurred, or secondary when the menses cease after a longer or shorter period of menstrual function.

Normal menstruation depends on general good health, and its disappearance may be the first indication of a systemic disease. It follows, then, that before any treatment is considered a careful general examination should be undertaken. In particular, tuberculosis, cardiac disease, dietary deficiencies, blood dyscrasias, unhealthy environmental surroundings and change of climate may cause cessation of the menses.

The majority of patients, however, who consult a physician (apart from those with a physiological amenorrhœa) suffer from an endocrine disturbance or dysfunction. The exact nature of this is often difficult to determine. The three endocrine glands most important in this connection are the pituitary, the thyroid, and the ovary. When the dysfunction is primary in the pituitary or thyroid there frequently are associated disturbances of metabolism such as obesity, lowering of the basal rate and so forth.

The marked pituitary dyscrasias have given rise to well-known clinical syndromes accompanied by amenorrhœa, such as Frolich's syndrome and Simmond's disease. Minor pituitary dysfunctions affecting the ovaries may show no obvious bodily stigmata in the patient, though mild grades of Frolich's syndrome are not uncommon.

It is well known that disturbances of the thyroid gland may be associated with amenorrhœa or menorrhagia. The combination of hypothyroidism, moderate generalised obesity and amenorrhœa is frequently seen. As pointed out in a recent paper by Dodds

and Robertson[12], the hypothyroidism may not be apparent unless a basal metabolism determination is made.

While ovarian deficiency may be primary, as when a corpus luteum persists, usually the faulty ovarian function is secondary to pituitary failure. However, Stein and Leventhal[13] have pointed out the association of amenorrhœa with polycystic changes in the ovaries accompanied by thickening of the tunica albuginea, reporting a series of cases in which normal menstrual function returned after wedge-shaped resection of the cystic ovaries.

The findings on endometrial biopsy in amenorrhœa are not constant, though in the longstanding cases atrophy of the endometrium is usually found. Its occurrence is an unfavourable sign in prognosis.

The outlook for the restoration of normal cycles depends on many factors. The age of the patient and the duration of the amenorrhœa are of prime importance. In general, an amenorrhœa of over 24 months gives a poor prognosis. Fluhmann states that 45% of patients at the Stanford University Clinic observed spontaneous uterine bleeding within a few weeks of observation whether they were treated or not. This tendency to spontaneous recovery must be remembered in the estimation of the virtue in any specific method of treatment.

Concerning treatment, I shall here express my own views for what they may be worth.

Systemic diseases having been excluded, attention should be paid to the diet and personal hygiene. A well-rounded diet supplemented by sufficient vitamins and minerals is prescribed. A serious attempt should be made to bring the patient to her ideal weight. This usually means a reducing diet. Thyroid extract is given in accordance with the level of the basal metabolism. The latter should be checked periodically to see that the rate is being kept within normal limits (preferably on the plus side) on the dosage taken. Regarding further endocrine treatment, I believe that judgment should be used in the selection of cases. In very longstanding cases, or in patients over thirty years of age, it is doubtful if the game is worth the candle. After all, amenorrhœa is compatible with fairly good general health. Those cases showing marked evidences of pituitary dysfunction are also disappointing to treat.

On the other hand, in young women who are desirous of marriage and a family, I believe that further treatment is indicated.

Kaufman[14] described the first complete replacement therapy of amenorrhœa in 1934. In this brilliant work, he showed that one could reproduce the whole of the menstrual cycle in castrated women by first injecting œstrogenic hormone followed by progestin, thus duplicating the events which occur in the normal cycle. Large doses of the œstrogenic hormones were necessary. The application of this treatment to patients with amenorrhœa was then tried. The results in secondary amenorrhœa were usually successful, while the response was less certain in primary amenorrhœa. Since this was substitution therapy in most of the cases, amenorrhœa reappeared when the treatments were discontinued. The problem is to stimulate the ovaries to a return of normal function. My method of procedure is as follows: A preliminary course of fairly large doses of œstrogenic hormone (œstradiol benzoate—2,000 to 10,000 R.U. for five or six injections) is given to induce growth and increase vascularity in the usually atrophic uterus. Not infrequently uterine bleeding (probably anovulatory in character) will follow the cessation of this course of treatment. If bleeding occurs, a series of daily injections of anterior pituitary hormone (gonadotropic factor) is immediately carried out from 10 to 14 days. A rest period of two weeks is then given. Should menstruation ensue, a shorter course of anterior pituitary hormone is repeated. Should bleeding not occur, after the original injection of œstradiol benzoate, five or six doses of progestin (1-2 mg.) is given every other day. Bleeding will nearly always follow within a few days after stopping the progestin—provided the original dosage of œstradiol was adequate. One then proceeds to the anterior pituitary hormone as previously mentioned. Fluhmann believes that the effect of anterior pituitary hormone may be enhanced by the concomitant adminisiration of chorionic gonadotropic hormone. Obviously considerable patience must be exercised by both patient and doctor, and the expense involved is a considerable item. However, I believe that if the cases are carefully chosen, treatment will be successful in the majority of instances. The great need, however,

in this connection is for more potent and purified anterior pituitary gonadotropic preparations, as well as a substantial reduction of the cost of endocrine preparations. The organic chemist may solve both angles of this difficulty.

In several clinics the use of low dosage irradiation of the ovaries and pituitary has been undertaken in the treatment of amenorrhœa. Mazer goes so far as to say that irradiation is the most satisfactory treatment. Probably because of the known narrow margin of safety involved, this form of treatment has not become popular. Since the mode of action of the X-ray is primarily destructive to the Graafian follicle, it is difficult to understand the rationale for its use as far as the ovary is concerned. As an experiment, a few long-standing cases of amenorrhœa presumably of pituitary origin were treated by X-ray of the pituitary from the gynæcological endocrine clinic with absolutely negative results.

Functional Uterine Haemorrhage.

The last disorder of menstruation to consider is functional uterine hæmorrhage. The employment of this term should be limited to those patients with grossly normal pelvic organs. This disorder may occur at any age during the menstrual life of a woman, though it is typically found between the ages of 38 and 45. About 5% of all cases, however, occur at puberty. A relatively large number of cases with functional hæmorrhage develop after a pregnancy, especially an abortion. It would seem to occur at a time when the ovarian function is undergoing a period of change or readjustment. A study of the ovaries in these cases characteristically show an absence of corpora lutea and a persistence of unruptured follicles. The endometrium is always of the non-secretory type, usually markedly thickened and hyperplastic. Often the surface is irregular and shows prominent elevations —the so-called polypoid formation. Microscopically the endometrium is thick and heavy, the glands are markedly increased in number, often irregular with much variation in their size and shape. Cystic glands lined with a low cuboidal epithelium—the so-called Swiss cheese pattern—is frequently present. Some glands may show stratified epithelium. Such an occurrence may lead to an erroneous pathological diagnosis of squamous carcinoma, as Fluhmann has demonstrated. If the endometrium is examined during a bleeding phase, areas of necrosis with thrombosis of neighbouring blood vessels and a marked leukocytic infiltration are seen. This is the picture formerly described as hyperplastic endometritis. The changes in the endometrium are due to failure of corpus luteum formation and activity, so that there is a persistence and abnormal exaggeration of the proliferative phase of the cycle. While hyperplasia of the endometrium is the typical microscopic picture, functional bleeding may occur from other types of non-secretory endometrium. It seems clear that the hyperplasia is not the cause of bleeding, but rather the result of the continued œstrogen stimulation.

Schröder has applied the term metropathia hæmorrhagica to functional uterine bleeding, and this is the expression commonly used in Europe for such cases. The bleeding may be of the menorrhagic type with shortened intervals, or both menorrhagia and metrorrhagia with totally irregular periods, may occur. The association of hypothyroidism is found fairly frequently.

Before consideration of the treatment of functional uterine bleeding it must be emphasized that organic causes for the hæmorrhage must be eliminated. With the exception of puberty bleeding, the employment of a diagnostic curettage should be considered. This is especially important in women over 35 in order to exclude carcinoma. Even in younger women, bleeding first considered as functional may prove to be due to an endometrial polyp, submucous fibroid, or a small portion of retained placental fragment. In particular, inter-menstrual bleeding demands curettage as a preliminary to any treatment.

When the hæmorrhage is severe it is often necessary to institute measures for its control pending an exact diagnosis or response to endocrine therapy. Such procedures include the use of bed rest, ergot (preferably the newer preparations), vaginal or uterine packing, and the use of blood transfusions and iron preparations to control the anæmia. It is not necessary to further dilate on such well-known procedures.

Regarding the specific and endocrine treatment of functional bleeding, I believe it is an advantage to consider the treatment according to different age groups.

Group I—Functional Bleeding of Puberty.

Abnormal bleeding during the early years of menstrual life is fortunately not common, as it is frequently troublesome to control. Assuming that a careful general examination has eliminated a systemic cause, a course of treatment with chorionic gonadotropic hormone should be instituted. A course of daily intramuscular injections (250 to 500 rat units) for 6 to 10 days, beginning with the onset of bleeding, is carried out. The administration of thyroid in suitable cases is of great value.

The mechanism by which the chorionic gonadotropic hormone controls bleeding is not clear. It probably does not produce luteinization in the human ovary. It may act through producing atresia of the growing follicles, thus diminishing the œstrogenic overactivity. At any rate it has survived the test of extensive clinical trial.

Jeffcoate has stated that puberty bleeding may be controlled in over 80% of cases by this means alone. In the more intractable cases, curettage and the us of small blood transfusions (possibly from pregnant donors) may be necessary. In extreme cases small doses of radium may be required.

Group II—Functional Bleeding occurring during active sexual life.

I group here the patients usually seen between the ages of 25 to 38. Frequently, a pregnancy has preceded the onset of symptoms. In this group, also, the chorionic hormone is of real value, and should be employed in a similar manner as in the previous group, but in somewhat larger dosage. Curettage should not be delayed too long—not only because of its diagnostic value, but also because the removal of the excessive growth of uterine mucosa apparently favours a more immediate action from the endocrine therapy. Should the use of chorionic hormone fail, and I believe that in cases where it will be of value the response is fairly prompt, one may then change to corpus luteum hormone (progestin). This is replacement therapy, but often is effective when the chorionic hormone fails. A specific treatment devised by Browne and Allbright is as follows: Two weeks after a preliminary curettage a course of four injections of progestin, in doses of from 2 to 5 mg., is given every other day. They claim that the ensuing menstrual period is usually normal in amount and duration. A similar course is repeated twenty days after the period commences. In some few instances I have noted the association of small ovarian cysts with cases of functional bleeding which failed to respond to endocrine therapy. In three instances, resection of the cyst from the ovary was followed by a prompt return of regular and normal menstruation.

As a last resort, I believe that hysterectomy is preferable to irradiation in this group of cases, as the ovaries may be conserved and the untoward effects of a premature menopause avoided.

Group III—Function Uterine Bleeding in the Age Group 38-50.

This group is, on the whole, less responsive to endocrine therapy. A diagnostic curettage should precede all therapy, as the possibility of carcinoma must be eliminated. The general practice in many clinics is to institute radium therapy at the same sitting as the curettage, provided no organic lesion is discovered to account for the bleeding. In the younger patients of this age group I believe that such a procedure may be somewhat radical.

My own choice of procedure is based on the following factors:

(1) The type of endometrium found at curettage;
(2) The severity of the bleeding, and
(3) The age of the patient.

For instance, in a woman of 39 or 40 with only moderate bleeding, and the curettings showing a mild or moderate degree of hyperplasia, the curettage would be followed by a trial of endocrine therapy. If this is successful, frequently radiation is not necessary at all. On the other hand, should the bleeding recur, one can then resort to the induction of an artificial menopause by X-ray treatment. On the contrary, should the patient be 45 or more, with a marked degree of endometrial hyperplasia, or the bleeding profuse and more or less continuous, the immediate insertion of radium into the uterus is preferable. Thus, by individualisation of cases with a corresponding diffference in treatment, I believe that better results can be obtained than would follow the routine use of radium in this age group.

In conclusion, endocrine therapy now forms a valuable contribution to our medical

armamentarium and has undoubtedly come to stay, despite occasional disappointing results in individual cases, and we await its future developments with interest.

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Public Health Section

PROSTITUTION—FACTS AND FALLACIES

(Abstract of an address given before the Vancouver Medical Association, December 5th, 1939.)

DR. D. H. WILLIAMS

Director of Venereal Disease Section, Provincial Department of Health.

Prostitution is a problem, a social problem, which is also related to venereal disease, and this constitutes our justification for dealing with the subject. It is not merely, or even mainly, a moral problem, but one that must be solved if we are to reduce the incidence of venereal disease to a minimum.

Pelouze, in his book on the Treatment of Gonorrhœa, says in a chapter he devotes to prostitution: "The chief interest of the physician in prostitution is neither as vocation, avocation nor as an art, but as a potent means whereby genital infectious disease is spread."

Most of the opinions of the average layman, even of the average physician, are 100% fallacious. We must correct these mistaken ideas, especially in the minds of doctors, on whom so many must depend for authoritative instruction. Venereal disease is a major health problem in British Columbia today. We have not recognized this fact—primarily because of the secrecy usually attached to discussions of this subject, and the complete absence till lately of any attempt to give the public information about it. Only within the last two years has any adequate attempt been made to bring the true state of affairs in British Columbia to the light of day.

In 1938, 92,000 tests for V.D. were made in the Public Health Laboratories of the Province. Five-sixths of these were made for private physicians, and this statement will give some idea of the volume of venereal disease in the hands of the private physician.

28,791 doses of antisyphilitic medication were distributed; 998 written consultations were sent to doctors; 3034 new notifications of venereal disease were made in 1938, and since we know that only one in three is usually reported, this means nearly 10,000 new infections. The number reported, however, is steadily increasing.

Something must be done about it, and something is being done. Roseneau, perhaps the outstanding authority in this regard, says: "Any sanitary measures taken for the prevention of venereal disease which do not include some method for handling the problem of prostitution are doomed in advance to failure, since they will ignore the chief root and source of the disease."

Last year, in Vancouver, it was quite impossible for the V.D. Clinic to keep up with the flood of cases which were infected in the brothels, and this means that if we are going to do anything effective about venereal disease we must begin with prostitution, and do something about that.

There are two types of prostitute, the clandestine and the professional. It is a fact that the clandestine prostitute greatly outnumbers the professional. But she is a different type of woman—generally she is mainly engaged in other work, often confining her favours to one man, at most to one or two a week, and so far less likely to become infected and spread the disease. Further, if she does become infected, she usually goes promptly for treatment, and suspends her sexual activities while undergoing this.

The commercial prostitute presents an entirely different problem. Dr. Williams suggested that we should employ the utmost frankness in this matter and thought that we might well drop a great many outworn words and phrases. Thus he feels that "bawdy-house" is not a good term, and he suggests some such word as "fornicatorium," a word of his own coining. This would be definable as "a place where the daughters of the underprivileged classes are exploited by third parties, and the use of their bodies sold for the profit of these latter."

We are faced with the question: "What are we going to do about bawdy-houses?" and right here we run into trouble and obstruction. The situation is one that demands, first, education of the public in the actual facts.

The Department of Health is appointing educators, whose function it will be to see that every citizen in the Province has the opportunity to learn the facts about bawdy-houses, about prostitution, the facts about its relation to venereal disease, the danger it is to him personally and the country at large, and the latest opinions of authorities as to how it should be dealt with.

There have been two ways suggested for dealing with the brothel, or bawdy-house, the "fornicatorium":

1. *Segregation and control.* Until lately, this was the policy adopted in British Columbia, and it is still advocated by many, including many people who conscientiously believe it will achieve the desired result. We were, until recently, a new country, a pioneering country, with a very mobile population, and the method of segregation had, no doubt, certain advantages. But we are getting past that stage. We have a settled type of society, with definite laws, with a Criminal Code. This Criminal Code, as it stands today, makes the existence or establishment of a bawdy-house, frequenting of the same, renting one's house for such use, all illegal, and a crime. But we have tolerated daily breach of this law in all these ways, and so venereal disease has grown steadily. This is the considered and unanimous opinion of all authorities on this subject.

"*Everything that is said in favour of segregation and control, and all the propaganda about it, comes from the bawdy-houses and those who run them.*" The public does not know this fact and believes the untruths that are handed out to it. Segregation is impossible and has never been accomplished. The reports of the League of Nations show this. It is, in the nature of things, doomed to fail. Thus Paris, where segregation has for generations been the settled policy, has 5000 known and licensed prostitutes, and 50,000 unlicensed ones known to be practising. It is the same in any community. It is impossible to limit these people to brothels. The nature of the business is such that the girls in the houses must constantly be changed, as they lose their freshness or become diseased. Then they get out of control. They are on the move all the time.

As regards "control." There are two factors in this:

1. *Police control.* The police keep a check, as far as they are able, on the movements of these girls, fine them more or less regularly, so that this fine is really a form of license. It is a most pernicious system—in that it constantly exposes the police force to the possibility of demoralization, as we see in certain cities.

2. *Medical control.* This is another fallacy. Last year 2% of all loggers and miners in B. C. had new infections. A girl has no chance of escaping infection, and of those inmates of brothels examined at the V.D. Clinic last year, 84% were found to be infected.

There are all sorts of reasons why even a recent certificate of negativity is of no value whatever; when obtained it has usually been from a practising physician. Girls may use drops, take alum douches, etc., before going for examination; a known healthy girl may obtain certificates under false names for a dozen infected ones. In one case cited by the speaker, a cook in one house, not infected herself, visited 12 different doctors, obtaining negative certificates in 12 different names, and sold them for $2.00 each over the price she paid for the test, etc.

Too, if control were really put into effect, we should have to begin by stopping 85% of the girls from working till they were treated and cured. The rest would soon be infected; no girl could afford to spend most of the working year idle, and undergoing treatment, and as it would not pay them they would not report for examination, and would evade the regulations in some way.

Segregation and control are an impossibility, and we may as well recognize this fact, and also the fact that they are chiefly urged by those whose interest it is to maintain the system, or by those who do not know the facts of the case.

2. *Suppression.*—This is the other method of dealing with prostitution, and is the method advocated by all health authorities.

No economic or health expert advocates segregation and control—every known expert in these matters, in all countries, advocates and urges the method of suppression of bawdy-houses.

Dr. Williams emphasized the fact that the Public Health authorities do not advocate *abolition* of prostitution. They recognize this is impossible, a Utopian dream. The policy of the modern Public Health leaders may be stated thus: "*We must reduce prostitution, and so venereal disease, to a minimum, by the enforcement of the existing laws, education of the public, and suppression as far as possible.*"

If the Criminal Code were enforced, the population of Essondale would be markedly lessened, an enormous financial burden on the community removed, a main cause of sterility largely wiped out, numberless mutilating pelvic operations rendered unnecessary. There is a tremendous inescapable responsibility on the shoulders of those who countenance the breaches of the law, and the ignoring of it.

There are those who speak of the ill effects of suppression. Let us see what would happen if suppression were put into effect as far as possible.

The evil effect on the tourist trade is often referred to. It is stated that this business is being damaged by all this publicity. It is a fact that the existence of prostiution, with the attendant risk of venereal infection, constitutes the greater threat to the safety of those travelling in our country.

When we have houses of prostitution, we have a force of hotel clerks, bellboys, pimps and procurers, taxi-drivers, etc., all directing people to these houses, feeding the trade. The average girl inmate, protected by our present methods, may deal with as many as 30 men a week. Suppose we close the houses and suppress them to this extent. If this girl is out on her own, she is lucky to get as many as 7 or 8 customers a week. This greatly lessens at once the danger of spread of venereal disease. Morover, this does not pay, and the girl is likely to pack up and leave town. Reports from the East are already available to show that many of the girls formerly operating in Vancouver have gone back East to find a market for their wares, since this market was practically closed to them. Many girls, too, who have not been engaged in the trade for long, take up other ways of earning a livelihood. Many marry and live respectably afterwards.

Instead of 100 girls, who are now inmates of known houses in Vancouver, with an average of 30 exposures a week each, we might have 30 or 40 under the method of suppression, with an average of 7 or 8 exposures a week, thus, as has been said, greatly lessening the opportunities for spread.

It is charged, again, that under this method prostitution will spread all over the city. This is not actually the case, and this fallacy can be exposed—but those who are exploiting it have a recognized technique in the matter. They make a noisy nuisance of themselves, infest residential streets, etc., in the hope that decent citizens in disgust will come to the conclusion that brothels would be better than this. This is all done to impress the public

and obtain the end they are seeking. The obvious remedy is to enforce the law against the landlords who let them operate on their property, and against those who are operating thereon things which are against the law.

It has been charged that sex crimes increase when bawdy-houses are closed. The League of Nations' studies have shown that this is not true; that they actually decrease.

All these lies and fallacies are mere propaganda, deliberately put out by those who are interested, and accepted by an uninformed public as facts. Dr. Williams states that his department intends to see that they get the true facts of the matter.

What are the results of closing the houses and enforcing the law? Here we have the reports of many years of investigation by the League of Nations' several committees, the British Ministry of Health, of Scandinavia, and fifteen other countries. In 1919 conditions in Great Britain were so extremely bad that the government appointed Col. Harrison to make a study and report. There were at that time 112 cases (new yearly) of syphilis per 100,000 of population. As a result of suppression this has been reduced to 47 per 100,000 in 1935.

Scandinavia has reduced her incidence from 93 in 1919 to 19 per 100,000. In Vancouver, even the partial efforts we have been able to make are showing results, some houses having been closed since February, 1939. Between this and August, the level of new G.C. in men has dropped 39%. The type of syphilis seen at the V. D. Clinic has also changed. Instead of 20% of new cases being early syphilis, now the figure is only 8%.

It is most important that the public be informed of these facts and others, that fallacies be exposed, that a clear knowledge of the truth be spread. It is equally important that the medical profession should really know the facts and be educated out of what in most cases is merely ignorance.

The Department needs the wholehearted and informed support of the medical profession in its effort to disseminate knowledge in health matters. Dr. Williams, in closing, paid a sincere tribute to the co-operatoin of the police authorities, especially the Provincial Police, and also the Vancouver Folice force. As a result of this co-operation, houses have been closed as follows: Vancouver, 33; Nanaimo, 10; Victoria, 7; Zeballos, 1.

The Department, the speaker said finally, is not going to rest till all houses are closed.

Vancouver General Hospital

ECTODERMOSIS EROSIVA PLURIORIFICIALIS

D. E. H. Cleveland, M.D., C.M.

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Vancouver General Hospital.

The infliction of such an unwieldy sample of terminology upon a patient medical public calls for some justification. First, in excuse of its length and many syllables, it is to be said that this is a descriptive name, like many in dermatologic nomenclature; thus it should really mean something to us, possessed as we all are of the necessary smattering of classic tongues. As the late F. J. Shepherd, of immortal memory, was accustomed to say to his freshmen classes, "Blessed be he who knows Latin and Greek, for he shall never be discomfited." It is better that a disease should bear a name which conveys some information of its nature than a bare eponym which not only means nothing but is often attached to two diseases simultaneously which have nothing in common. Two examples which come readily to mind are the diseases bearing the names of von Recklinghausen and Paget.

If it is asked why we cannot call this disease by a plain English name, the reply is that we can, and we will just as soon as plain English equivalents replace the Greek polysyllabic names by which we call many familiar animals and plants. If we speak of Horny Nose, River Horse and Golden Flower instead of *rhinoceros, hippopotamus* and *chrysanthemum,*

then the name at the head of this paper can be more simply if not economically replaced by Erosive Outbreak of the Skin Involving Several Orifices.

The discussion in a general medical journal of a disease which is rare and of no general interest is not desirable perhaps, but this disease is probably not rare, and many may realize that they have encountered but not recognized it before. Its appearance and behaviour is so formidable, however, that it impresses the inexperienced with the necessity for making a grave prognosis. Nevertheless its management is simple, serious complications are unusual, a favourable outcome is to be anticipated and no bad after-effects are seen. For these reasons it is believed that its characteristics and management should be a matter of general knowledge.

Cases have been reported by a number of French and Italian writers, but J. W. Klauder[1] of Philadelphia was the first writer in English to describe it as a clinical entity. His presentation and discussion of cases is very complete, as his bibliography also appears to be up to his date of writing (1937).

The disease bears some resemblance to the more severe forms of erythema multiforme, especally those affecting the buccal mucous membrane, and its relation to or identity with that disease is still under discussion. It also is apt to be confused with the human form of foot and mouth disease. Its features distinguishing it from these two conditions are readily recognizable, and the distinction from the latter disease is important to make.

The syndrome consists of a vesicular and bullous eruption involving especially the hands and feet, and some or all of the body orifices. The onset is acute with fever and severe constitutional symptoms. Young males are most frequently attacked, and the occurrence is principally in late winter or spring.

Stomatitis and bilateral conjunctivitis are the most conspicuous features at the outset, and are constant in all cases. Sore mouth and throat is complained of at the beginning, and the erosions extend into the pharynx. Balanitis, especially with vesicles about the meatus, is common. Proctitis, urethritis and rhinitis may occur, and ulcers in the vulva and vagina have been described in one female case. These orificial lesions begin as vesicles on all mucous surfaces, involving in the mouth the tongue, lips and buccal mucosa, and the severe stomatitis which follows is characterized by a pseudo-membrane, removal of which causes bleeding. Epistaxis is frequent, resulting from removal of crusts from the nose. The conjunctivitis rapidly becomes purulent.

The skin lesions usually appear a few days later and may extend sparsely from the hands and feet to the forearms and legs. They begin as erythematous macules, often with vesicles suggestive of varicella, but with a livid red halo, and iris-like lesions. Crusting usually follows. Little if any regional lymphadenopathy is found.

The temperature is usually about 103° or 104° at first, and subsides gradually. Prostration may be severe and the patient suffers much from pain on eating and drinking. Photophobia is usual. The course appears to be self-limited, terminating in from four to six weeks, according to most authorities, but relapses have been reported. The mucosal lesions bleed less, become less painful and gradually heal, the cutaneous lesions dry into crusts which are shed, and the patient regains his appetite and sense of well-being.

Klauder[1] lists the following symptoms which distinguish foot and mouth disease in the human from ectodermosis erosiva pluriorificialis, which it often closely resembles: considerable burning and dryness in the mouth, inflammation, redness and swelling around the nails, and desquamation usually occurring at the site of vesicles on fingers and toes.

Owing to the common finding of Vincent's organisms in the mouth they are usually regarded as the cause of the symptoms and treatment is directed in accordance with this view. There is no evidence that these commonly saprophytic organisms have anything to do with the disease in question.

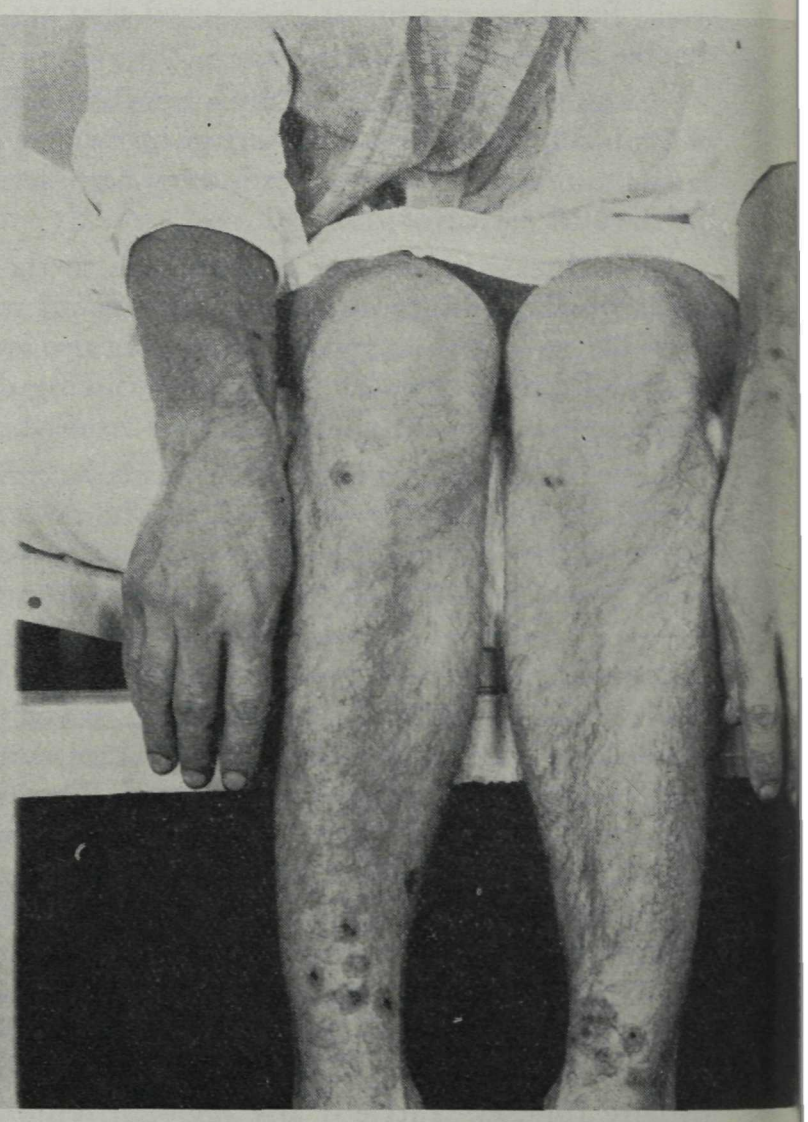
Treatment consists of general measures such as confinement to bed, simple bland washes or ointments for the mouth, nose, eyes and other mucosal lesions, liquid and later soft diet, and the usual nursing care. Warm Dobell's solution for the mouth and weak boric solution for the eyes, used frequently, and borated vaseline for the lids, nares, lips, urinary meatus and skin lesions seem to be adequate. Special requirements for high caloric diet, augmented vitamin intake and hæmatinics may arise.

Small doses of sulphanilamide by mouth appears, in the two cases presented, to have had some effect in shortening the course of the disease.

Case Reports

Two cases have been observed within a period of 15 months in the Vancouver General Hospital, which presented the typical symptom-complex. One of these appeared to have an extension of the mucosal involvement greater than has previously been reported. Possibly, as in pemphigus, extension to the respiratory and gastro-intestinal tracts may be very considerable in severe cases.

Case 2.—*Purulent conjunctivitis, cheilitis and stomatitis.*



Case 2.—*Distribution of maculo-vesicular lesions on extremities.*

Case 1.—A man, aged 20, was admitted to the Infectious Disease Department of the Vancouver General Hospital on April 6th, 1938, as a private patient of Dr. S. Graham Elliot, to whom I am indebted for the privilege of reporting it.

Three days earlier blisters had appeared in the mouth. The next day the eyes were sore, and a day later an eruption appeared on the skin. The patient was examined by me on the day following admission. The mouth temperature was 103 degrees. He was pale, prostrated, drowsy and appeared toxic. The buccal mucosa was deep red and stripped off at a touch, leaving a raw bleeding surface, but there was no evidence of necrosis. There was a purulent conjunctivitis. He expectorated a considerable quantity of bloody, muco-purulent, ropy sputum.

On the forearms and legs there was a sparse eruption of erythematous macules from pea- to bean-sized, and a number of flaccid blebs with a dusky red halo. There was very little eruption on hands or feet. A purulent erosion surrounded and dipped into the urinary meatus. No superficial lymph-nodes were enlarged. Except for difficulty in eating and drinking there had been no complaints. There had been no skin discomfort except smarting or stinging when the blebs were wet with water as in washing.

Vincent's organisms were recovered in fair abundance from the mouth. There was no leucocytosis and except for an absence of eosinophils in 200 cells counted there was nothing noteworthy in the smear. The blood-culture was negative.

In addition to local care to the mouth, eyes and skin, and general measures such as suitable diet and confinement to bed, the soft palate was swabbed with 10% arsphenamin in glycerin followed by hydrogen peroxide gargles and prontylin gr. v (gm. 0.32) by mouth four times daily.

Improvement began almost at once, and six days after admission, and nine days after onset, the patient was feeling decidedly better, the daily temperature not rising above 101 degrees, appetite returning and local discomfort being greatly decreased.

On th 17th day of the disease, the patient was discharged from hospital. His mouth was still somewhat sore, and the lips bled slightly on handling, but the temperature had been normal for four days and he felt well.

Case 2.—A man aged 22 was admitted to the Eye, Eear, Nose and Throat Department of the Vancouver General Hospital, under the service of Dr. Lavell Leeson, on July 14th, 1939.

On July 7th he had felt feverish and fatigued. He consulted a physician, who found a temperature of 104 degrees and advised rest in bed. The temperature fluctuated between 100 and 102 degrees until July 11th, when it became normal, and he drove home to Pitt Meadows in his car. On July 13th the temperature again became elevated and for the first time he had sores and blisters in his mouth. On July 14th his eyes became sore and he was admitted to hospital.

He related that he had four similar but less severe attacks in the past ten years. In 1936 he had been told that he had Vincent's angina. In 1937 he had lobar pneumonia followed by empyema.

He had a bilateral purulent conjunctivitis and a generalized stomatitis with glossitis and cheilitis. The mucosa was raised up by confluent blebs, and there was copious bloody, muco-purulent and ropy expectoration. Except for some lymphadenopathy in the anterior cervical region there were no other noteworthy physical findings. The temperature was 102.3 and he felt very ill and depressed.

On July 17th a sparse eruption appeared on the arms and legs of erythematous macules which quickly developed into lax blebs which rapidly eroded, leaving a moist surface. There was no special localization in the extremities, and the palms and soles were spared. They were somewhat more numerous about the upper parts of the body. Not only were the mouth and eyes involved, as has been described, but there was a vesicular eruption about the urinary meatus and the anal opening. Neither in this nor in the former case did the eruption in the latter sites become very severe or cause any considerable degree of discomfort. These lesions were only discovered on examination, not having been mentioned by the patient.

As the provisional diagnosis on admission had been "septic sore throat," sulphanilamide in the form of neoprontosil, gr. lx (4.0) daily, had been commenced at once. I did not consider that it was responsible for the skin eruption and recommended its continuance. On July 19th the dose was lowered to gr. xx (1.3) daily. Gentian violet and acriflavian solution was applied thrice daily to the gums and pharynx, hot saline throat irrigations were given hourly and 2% hydrarg. ammoniat. in vaselin was applied to the cutaneous lesions. The eyes were irrigated with oscol argentum.

Cough with profuse muco-purulent sputum developed on the fourth day in hospital and respirations were laboured. Profuse sweating was present and there were signs of moisture in the larger bronchi. X-ray examination did not reveal any signs of active disease in the chest and the sputum was negative.

Improvement, indicated by increasing strength and co-operation on the part of the patient, was becoming evident by July 20th, although his outward appearance was still alarming due to the severe conjunctivitis, cheilitis and coughing, and the temperature still reached 102 degrees daily and did not fall below 99.2. Following this date, however, it subsided gradually with daily remissions, and except for one brief febrile period about August 2nd it was normal after July 28th.

Laboratory findings were negative except for a moderate leucocytosis. Only the common saprophytic organisms were found in the throat culture, and it was noteworthy that Vincent's organisms were not found in the mouth.

The patient was discharged from hospital on August 15th, feeling well except for slight soreness of the gums, 39 days after the onset.

Summary

Two cases of a disease resembling erythema multiforme with buccal involvement, but with certain special features distinguishing it from the usual forms of that disease, are described.

The history and symptomatology correspond with those of a disease described by Klauder and some European writers as Ectodermosis Erosiva Pluriorificialis.

Other diseases with which it has been or may be confused are the human form of foot and mouth disease, streptococcal pharyngitis, pemphigus and Vincent's angina.

For reasons indicated in the preceding paragraph and the fact that it has been described as a self-limiting disease, it is considered that it is less rare than hitherto believed, and should be recognized more commonly in the interests of a good prognosis and avoidance of misdirected effort.

The exhibition of sulphanilamide appears to be of some value in shortening the course of the disease.

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St. Paul's Hospital

CONGENITAL POLYCYSTIC DISEASE OF THE LIVER

LYON H. APPLEBY, M.D., F.R.C.S. (ENG.)

Mrs. V., age 46. Married; 4 children, all healthy, youngest now 12 years old. Family history quite negative.

Past History.—Tonsillitis, age 14. Tonsillectomy same year. Past labours all difficult, instrumental deliveries. Four years ago, while playing badminton, developed kink in her neck and was forced to stop playing. Was in bed 3 days following and one side said to be numb and partially paralysed; recovered. Following recovery went to Dr. Mason; exhaustive physical examination was quite negative, except that he thought she might have some minor gall bladder disturbance. No X-rays taken at that time.

Present Condition.—Twelve months ago noticed a lump in her upper abdomen, centrally situated, quite painless, unassociated with symptoms of any kind; all functions normal. States that the lump has been slowly increasing in size and that the last three months it has doubled in size. It is now larger than a good-sized grapefruit. Appetite is good, digestion normal. Bowels act normally daily. All functions normal, and apart from the presence of the mass believes herself to be in perfect health. Plays badminton twice a week and last week a friend asked her if she were pregnant so decided its size must be becoming obvious to her friends and that it was time she consulted a physician.

Physical examination.—Healthy-looking woman, weight 122½ lbs. Throat, nose and sinuses clear; tonsils out; several dentures. No thyroid enlargement of cervical adenopathy. Chest perfectly clear. Heart apparently normal. Breasts negative. B.P. 138/80.

Abdomen showed a conspicuous mass in epigastrium extending downward below the umbilicus on the left side. This mass was not tender, seemed tense and fluctuant and was obviously cystic in character. The margin of the liver was indistincly felt but the right kidney seemed to be prolapsed and easily palpated. It was not tender. Spleen not felt. Hernial orifices normal. The mass was about the size of a small football.

Vaginal examination showed all pelvic viscera normal in size, shape and position. No tenderness. Cervix showed minor lacerations. Very slight vaginal discharge. Menses always regular.

Urinalysis—Acid, 1018. Albumin, negative. Sugar, negative. Micro., few epithelial cells. Red cell count, 4,300,000; hæmoglobin, 78%; white cells, 9,700; polymorphs, 64; lymphocytes, 36; no marked eosinophilia. Kahn, negative.

Chest X-ray was negative. No gastro-intestinal X-rays were taken, as the need for surgical exploration appeared obvious.

On the morning of October 3, 1939, under general anæsthesia, the abdomen was opened through an upper left rectus incision, with a pre-operative diagnosis of mesenteric cyst. An extraordinary condition presented itself. The large cyst seemed to be growing from the under surface of the left lobe of the liver, or what ought to have been liver. The entire liver was a solid mass of cysts about the average size of walnuts, and there was no recognizable liver tissue present anywhere, both lobes being equally involved. The gall bladder was perched on top of a cyst and seemed to be in every way normal, containing an ounce or so of bile; no calculi or adhesions. The spleen was normal in size, non-cystic. The left kidney was normal in size but contained about a dozen sub-capsular cysts about the size of a pea. The right kidney, which could easily be felt pre-operatively, contained a large cyst in its lower pole projecting downwards behind the cæcum, and the kidney proper contained numerous small cysts of smaller size. The kidney itself was normal in size and not prolapsed as previously thought. Pelvis and other viscera were normal and quite healthy. The large cyst was then aspirated and a clear opalescent fluid obtained. An attempt was made to remove this large cyst, but owing to the blending of its wall with the

walls of more deeply situated cysts within the lobe of the liver itself, that complete removal proved to be impossible. The greater part of the sac, however, was secured for pathological examination. One other cyst was aspirated and a different coloured fluid obtained, there being a faint suggestion of bile staining in the fluid from the second cyst. The abdomen was closed without drainage.

Post-operative History.—Uneventful until the fifth day, when patient complained of lassitude, weakness, headache and itchiness. It was noticed that she had developed a slight icteroid tinge. Van den Bergh was 28. Continued to run a low temperature of 99 for 8 or 9 days. Sutures were removed on the 11th day; soundly healed. Some fluid obviously present in the abdomen. Jaundice had disappeared; Van den Bergh now 18. Out of bed on 12th day, and while not very strong, allowed to her home on the 14th day.

Pathological Report—

(a) Sac Report: *Gross*—Specimen received consists of serous membrane with multi-unilocular cystic areas in the wall of this cystic membrane. (1)—Section taken from largest cyst; sectioned en masse; (2) section taken from cross section of one of the smaller cysts. *Microscopic*—Sections of liver cyst show these cysts to contain some serous material, which coagulated on fixation. These cysts are lined by a single layer of flattened, or very low epithelium, in places suggesting a flattened duct epithelium. Cysts of various sizes are seen, and in the larger ones the walls of the cysts are thickened, hyalinized, and lined by flattened layer of epithelial cells. Liver cells, themselves, stain well. Surrounding architecture shows increase in connective tissue. Apart from the thickening of the cyst wall, an hyalinization of this connective tissue, there is no microscopical evidence of any inflammatory process.

(b) Fluid Report: Examination of the fluid aspirated from the cysts shows no evidence of ecchinococcus infection and the culture was sterile.

Cystic degeneration of the liver.

DR. A. Y. MCNAIR, *Pathologist.*

Subsequent History—Seen at her home 10 days after leaving hospital, she was very uncomfortable from the pressure of accumulated ascitic fluid. Paracentesis was done and 8 quarts of deeply bile-stained "pea soup" ascitic fluid removed. Three weeks later a second paracentesis was done and 7 quarts of identical fluid removed. On December 12 was brought into St. Paul's for the weekly ward round clinic, where it was anticipated that a third abdominal paracentesis would be done, but she presented herself immeasurably improved. There was less than a quart of fluid present, which was not touched. Her general condition was greatly improved during the past week, appetite good, was gaining weight and strength and getting around more normally. Hæmoglobin was 73%.

Comment—Congenital polycystic disease of the liver is a very rare condition, particularly when it is so extensive that no recognizable liver tissue can be found. Many solitary or multiple non-parasitic cysts of the liver are reported, but I have been unable to find, so far, a report of any similar case to the above, in an adult, although I have found a few autopsy reports of somewhat similar conditions in the new-born. As to prognosis—I am slightly bewildered.

FEVER THERAPY IN RETRO-BULBAR NEURITIS

DR. A. R. ANTHONY

While there is seldom any difficulty in establishing a diagnosis of retro-bulbar neuritis, this condition is one of the most trying in ophthalmology in finding the cause and in applying the treatment which will result in a complete return of function of the optic nerve. Undoubtedly a great number of cases arise from disseminated sclerosis, a few cases are the result of sphenoidal and ethmoidal sinusitis, but there has been a great tendency in the past few years to overexaggerate the importance of sinusitis as a causative agent, even to the point of some surgeons advocating sphenoidal and ethmoidal operations in spite of negative X-rays and negative nasal findings. All too often we are left without any tangible focus of infection even after X-rays of teeth, sinuses, gastro-intestinal tract, a complete physical examination and blood tests.

The customary behaviour of this disease is a spontaneous improvement to useful vision regardless of the cause, although the great majority of cases result in reduced vision, central scotomata and partial optic atrophy. Empirical remedies such as sodium salicylate, potassium iodide, cyanide of mercury injections locally and pilocarpine sweats have been used with little or no success.

In January, 1936, Dr. Frank Emmons had a patient referred to him as a brain tumour suspect, showing œdema of the optic disc, reduced vision and injection of the conjunctiva in one eye and blurring of the disc margins with obliteration of the physiological cup in the other eye. The patient complained of photophobia, violent localized headache, failing vision and loss of colour vision for one week. Dr. Neil MacDougall was called in consultation as neurological findings were negative except for the local condition. Dr. MacDougall was of the belief that the patient was suffering from an atypical form of retro-bulbar neuritis. It was decided to subject the patient to artificial fever therapy in place of the conventional methods of treatment. The result in this case was most gratifying, with the prompt return of normal vision.

Case 1.—Mr. P., age 48, came under observation on January 4th, 1939. The vision in his right eye had been defective since birth. He noticed a gradual loss of vision in his good eye beginning one month ago. Two weeks later he was unable to read newsprint and the last week he was unable to drive a car. He had no symptoms and otherwise felt in perfect health. Past history was entirely negative; patient had always been well.

Eye examination: Right eye—External examination was negative, media were clear, fundus examination was negative, high hyperopia was present. Vision was 20/70 due to amblyopia exanopsia and fields of vision were normal. Left eye—No conjunctival injection was present, cornea was clear, anterior chamber clear, media were clear and intraocular tension was 22 Schiotz. The pupil was two-thirds dilated and reacted sluggishly and inadequately to light and accommodation. The fundus showed a marked œdema of the optic disc with engorgement of the retinal vessels. There were very numerous small petechial hæhorrhages in the area of the nerve head and the swollen nerve tissue was of a definite pinkish color. The retina adjacent to the nerve head appeared elevated and was thrown in folds.

The vision was reduced to 20/200. Fields of vision showed a generally contracted field with a large defect on the temporal side. The blind spot was greatly enlarged and a large central scotoma was present. The patient could not distinguish green or red objects.

The patient was referred for general physical examination but no positive findings were made. X-rays of sinuses, teeth and gastro-intestinal tract were negative. Complete blood examination showed normal relationship of hæmoglobin, red and white cells. Sedimentation rate and Kahn test were negative. Spinal fluid tests were made; normal pressure, negative Kahn, no increase in cells or protein was found.

On January 8, 1939, patient was given his first session of fever therapy. The temperature was elevated to 104 degrees F. and maintained for six hours. Within 36 hours the patient's vision had improved from 20/200 to 20/40 and œdema of the optic disc appeared to have diminished 50%. One week later the patient was given another similar fever treatment and again within 48 hours there was an improvement of vision from 20/40 to 20/25. Only a small amount of œdema on the upper margin of the optic disc remained. By January 28, 1939, the vision was 20/20 and fields of vision were normal except for a small enlargement of the lower portion of blind spot. Color fields were normal and one month later the fundus appeared normal. The vision was 20/20 and fields of vision were normal.

Case 2.—Bobbie B., aged two, came under observation on May 22, 1939, with the history that two weeks previously the mother had noticed the child appeared to have a head cold and a troublesome cough developed. The family doctor diagnosed whooping cough, although it was a mild case. The child was kept indoors but not in bed. The mother began to notice that the child appeared clumsy, falling over big objects, and awkward about picking up toys from the floor. This condition became increasingly worse until the day he was brought in, the morning of which he awakened and asked his mother why it was still dark. The child cried a great deal and said his head hurt him, he groped for everything and refused to walk at all. The past history until present sickness was entirely negative.

Eye Examination: There was no conjunctival injection. The pupils were widely dilated and did not react to light. There was no apparent light perception. The media were clear. The fundi showed a marked swelling of the optic discs and the retinal vessels were tremendously engorged. There were flame hæmorrhages about both discs and the retina surrounding the discs was grayish and swollen in appearance. The eyes were straight and there was no apparent extraocular muscular weakness.

A pædiatric consultation revealed no other physical findings other than the fact that the child was recovering from a mild attack of whooping cough. The central nervous system was negative. There were no symptoms of meningeal irritation. Kahn test was negative.

Fever therapy was commenced the evening of the day of the first visit. Within 12 hours the patient had recovered light perception and the pupils were back to normal size and reacted briskly to light and accommodation. The choking of the discs appeared to have receded to about half the original amount. Within three days the child was able to pick up a common pin from the floor. One week later all signs of œdema were gone and the nerve heads had a normal appearance. Due to the child's age it was naturally impossible to measure fields of vision or visual acuity, but from all appearances one would assume his vision to be normal

in either eye. A second fever therapy was given five days after the first treatment. In both cases the temperature was elevated to 104 degrees for 6 hours.

The first case cited illustrates the case of retro-bulbar neuritis in which, after a thorough focal search, no focus of infection is found and the physician is left to various empirical remedies of doubtful value. Undoubtedly, without any treatment at all, this man's vision would have improved, but having only one good eye it was vital to him that he should regain the best possible visual acuity. Whether he had some form of toxic neuritis or an undiscovered focus of infection, fever therapy appeared to be a reasonable treatment.

In the second case cited the acuteness of the onset with sudden and complete blindness associated with such a severe œdema of the nerve heads made it appear that this was an emergency which needed immediate and drastic treatment. While the retro-bulbar neuritis was presumably a secondary infection from the whooping cough, it still presented a difficult problem for treatment by the conventional methods. Certainly the fever therapy resulted in sudden restoration of sight as dramatically as it was lost.

In cases of this nature it is my belief that fever therapy is of value and will save many eyes which otherwise would have permanent partial disability.

Discussion by Dr. Frank Emmons.

Inflammation of nerve tissue in general has been shown to be particularly amenable to hyperpyrexia therapy. This is the rational of the modern treatments of multiple sclerosis, syphilis of the central nervous system and severe cases of neuritis. In my experience, artificial fever has also benefited neuritis of the cranial nerves, notably the eighth or auditory and vestibular mechanisms where tinnitus and dizziness have existed. It was on the basis on this knowledge that in January, 1936, Dr. MacDougall and I decided to treat the patient referred to in Dr. Anthony's paper with artificial fever, resulting in the prompt and satisfactory return to normal vision.

Dr. Anthony's two cases illustrate the value of fever therapy in definite retro-bulbar neuritis. In the first case there was no demonstrable etiological factor and in the second it could be assumed that secondary infection from whooping cough was the underlying cause. It is of interest to record improvement in these two cases by the same form of treatment. The temperature was raised by means of induced current to a point of maximum dilation of the capillary bed. In the first case a temperature of 106° F. was used, but as experience has now shown, the lower temperature of 104° F. is just as efficacious. In addition to the two cases cited above, two others have since been successfully treated by the same method.

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"THE CERVIX A FOCUS OF INFECTION"

A. M. Agnew, M.D.

The rôle of foci of infection in the etiology of a multitude of pathological conditions has long been well established, and daily the cloudy sinus, the exuding tonsil and the dead tooth come under suspicion and under active treatment, to the betterment of the body physiology and to the greatly increased general sense of well-being of the patient.

For some time past, in treating infected cervices, to clear up an offending discharge or because its unhealthy appearance brought a fear of some malignant process in the future,

it has gradually been borne in upon me, by gradually increasing clinical evidence, that here is a chronically infected organ, the commonest focus of infection in the female body.

Throughout the various periods of a woman's life the cervix, it seems, is always playing an offending part. As a young woman it has been held responsible in some way for her dysmenorrhœa. During her active reproductive life it gives offense in painfully prolonging an already painful function, that of labour. Then in her later years it adds to her discomfiture by appearing, literally, at the introitus, and, to her at least, gradually dragging everything else with it. However, a better knowledge of physiology is bringing relief in her dysmenorrhœa; the pains of labour have been greatly alleviated, and proper surgical treatment entirely relieves the prolapse. Something the cervix has not been sought out and blamed for is a focus of infection in the etiology of pathological conditions which are often apparently entirely unrelated to the pelvis, and this I think is its commonest offense against the female physiology.

The cervix is at all times exposed to a myriad infecting organisms from the vagina, which is never a sterile tract. These organisms, of low virulence to the host, gain entrance to the deep glands of the endocervix. These glands become infected also, often with more virulent organisms, during attacks of acute or sub-acute cervicitis, which is a fairly common occurrence. The trauma of abortion, miscarriage and labour open up the portal of entry for these ever-present organisms. Following acute salpingitis, post-abortal parametritis, etc., organisms remain deep in the glands of the endocervix. Here, being well protected and well incubated, they multiply and produce multiple small abscesses. These small abscesses enlarge, the infecton extends and the whole cervix may become riddled with these small infected cysts, the so-called chronic cystic cervicitis. The cervix is richly supplied with blood and lymphatic vessels, through which absorption from this infected organ takes place into the systemic circulation. In spite of our knowledge of the existence of this chronically infected organ in the female pelvis, we have never considered it sufficiently as a focus of infection, as we have the cloudy sinus, the infected tooth and the exuding tonsil, as prime factors in the causation of general systemic disease. This is due, no doubt, partly to our own neglect in not making a careful pelvic examination in the woman whose symptoms are not referable to the pelvis, and partly also to the fact that the patient herself so often has had a slight or moderate vaginal discharge for so many years that no importance is attached to it in her mind, it being just one of those annoyances that women have to bear.

In reviewing cases, in search of evidence of the importance of the cervix as a focus of infection, I have divided them roughly into three classes as follows:

A. Those where the symptoms were referred to the pelvis;

B. Those where the symptoms were not referable to the pelvis, and

C. Those with general systemic symptoms together with some gross pelvic pathology.

Under each of these headings, let us consider several groups of patients.

A. (1)—Those whose only complaint is of a vaginal discharge.

In the great majority of these cases this is a misnomer, as it is not a vaginal discharge but a cervical discharge, and vaginal douches and tampons will only give slight relief, permanent cure only being effected by treatment applied to the cervix.

A. (2)—The patient who complains of chronic aches and pains referred to the lower abdomen and pelvis, with a heaviness and bearing-down sensation, usually more pronounced just before and during menstruation and often accompanied by a feeling of distension in the lower abdomen and gas. On pelvic examination, the uterus feels bulky and heavy and with the adnexa is very tender on palpation and to movement. Usually examination of the cervix shows it to be infected and it is for this reason that the usual treatment of hot douches and sitz baths give only temporary relief and not permanent cure. The absence of blue domed cysts or a discharge of pus from the cervical canal on examination does not mean that this organ is clean and healthy, for such a cervix may and likely does contain numerous infected cysts high up in the canal and deep in the tissue, which are only reached by treatment with the actual cautery.

So many patients in this group become entirely symptom-free with no other treatment than that directed toward the elimination of infection from the cervix, that one feels the

focus of infection here was the sole cause, eradication of which stopped absorption from this infected organ, which resulted in the clearing up of the congestion in the pelvic viscera and the return of these to normal.

Into this group fall those, usually younger, women who have had an acute salpingitis with pelvic peritonitis, or a post-abortal parametritis with or without peritonitis. Those patients treated with hot foments and hot douches, diathermy or Elliot treatment, etc., respond nicely and apparently leave hospital cured, only to reappear at a later date as chronic complainers with chronic aches and pains as mentioned above. In these cases the treatment is not complete when they are discharged from hospital apparently well recovered from their acute illness, for a focus of infection, the source of future trouble, has been left in the cervix, and to complete their cure should be eliminated.

A. (3)—The patient with low back pain. What a common complaint amongst women. Varying greatly in degree and amount of disability, but constant in its frequency, this complaint, "I have a backache, Doctor," finally classes many patients as neurasthenics or neurotics.

In this group is the woman who has worn pessaries for years, has consulted the herbalist and the naturopath, who has had her dislocated vertebrae replaced by the chiropractor and been manipulated by the osteopath; who comes to your office with arch supports in her shoes and wearing a sacro-iliac belt which in turn hides the scar of a uterine suspension. With her purse empty now, but for a box of Dodd's Kidney Pills, she comes to yet another doctor, but still with the same complaint, "I have a backache." How easy to say "neurotic."

Here, again, in spite of the note of pessimism, an encouraging number of these patients will gradually lose their backache as the infection, which is so often to be found, is eliminated from the cervix by thorough treatment.

In reference to the uterine suspension mentioned above, done to relieve the backache, one should be very careful in advising this operation even though the test of manual replacement and insertion of a pessary to maintain a correct position of the uterus has given a lot of immediate relief. If there is an infected cervix present the relief will be only temporary, and the backache will recur to plague both patient and doctor. Be certain before resorting to operation that any infection in the cervix has been removed, and frequently the backache is relieved even though the uterus remains in a position of retroversion.

A. (4)—Sacro-iliac Pain. The patients in this group come with the same complaint as those in the preceding one, but here the pain is definitely localized to one or other sacro-iliac joint, with greatly varying degrees of pain and disability. Those with minor degrees of disability in this region are quite common, and relief from symptoms is very gratifying. The importance of this focus of infection, in sacro-iliac disease of long standing, is best illustrated by the following case. A young married woman, 32 years of age, whose chief complaint was of severe pain in the right sacro-iliac region with marked disability. Her early history was negative and there was no history of injury. She had had one pregnancy six years before, during which at the fifth month she had an acute pyelitis, with a recurrence following a normal delivery, and was confined to bed for four weeks post-partem. In the next few months she began to have pain in the sacro-iliac region which gradually increased in severity as time went on, until she was barely able to carry on the lightest household duties. During this time she had had various forms of supportive and manipulative treatments with only occasional temporary relief. Pelvic examination showed a congenital type of retroversion with a short anterior vaginal wall, and small amount of mucopurulent discharge from the cervical canal. The cervix was dilated and cauterized high up and a good deal of pus obtained. This was repeated three times in three months, at which time the patient was getting around and doing her own work without any difficulty, her only complaint being that when she went to a dance she seemed to get tired before anyone else. She has been well now over a period of one year.

B. *Those where the symptoms are not referable to the pelvis.* Attention was drawn to this class of symptoms and definite pathological diseases in patients who have come in for periodic examination over a period of years, often the symptoms were minor in nature

and only mentioned as an afterthought or on more direct questioning, but the observations have been very interesting.

B. (1)—The first group in this class are those with neuritic or myalgic pains, usually in the shoulders and upper extremities. The severity of this complaint varied greatly, but in some the pain was quite troublesome. It was noted a good many times that where some infection was evident in the cervix and treated that these neuritic and myalgic pains disappeared. This result has occurred so often that now in such cases a careful examination of the cervix is made for signs of infection as well as the presence of other foci.

B. (2)—As you all know, secondary anæmia with its associated symptoms of eye, headaches, tiredness, etc., is extremely common amongst women. These women at each yearly examination would require iron therapy, with which they would be greatly improved, but by the next visit they would be back to the same low level again. Quite by accident again this chronic anæmia was overcome in treating the cervix to get rid of a vaginal discharge or because of the palpable or visible presence of cysts in this body. All other foci having been cleared up at some time or other, this was apparently the only remaining focus and the cause of the recurring anæmia. It is now part of the treatment to eliminate this infection.

B. (3)—Arthritis. This is a very important group, as arthritis is one of the bugbears of medical practise, and I cannot stress too much the importance of a thorough pelvic examination in the course of investigation in a case of arthritis in a woman. A prolonged and expensive course of treatment may be instituted while the only remaining focus of infection, which in the occasional case is the responsible factor, remains neglected. This is borne out in the following cases:

(a) A woman fifty years of age, who for three or four years had arthritis involving the small joints of both hands with considerable swelling and a great deal of pain. All of the foci of infection had been investigated and she had had considerable treatment during those years. Pelvic examination revealed a chronically infected cystic cervix, which was treated and cauterized. Arthritis in hands has cleared up and the patient is entirely free of pain.

(b) A woman, fifty-four years of age. Arthritis in the right knee. A lot of swelling and a great deal of pain. Here again the focus of infection that had been overlooked was in the cervix, and the symptoms entirely disappeared upon its elimination.

B. (4)—Essential Hypertension. This is an important group to medical men, and the observations made among this group have been very interesting. Essential hypertension, hypertension with no demonstrable cause, is certainly one of the unsatisfactory conditions, from a therapeutic standpoint, which every one meets only too frequently. You have all seen in textbooks, and many of you have likely had experiences of your own, that, in women, hysterectomy has been one of the numerous and varied procedures suggested as having some beneficial effect in cases of essential hypertension. I believe, in many cases, it has. Many of you, too, have possibly made the observation that women running a fair degree of hypertension show a considerable regression in their tension following hysterectomy for some other pathology, such as simple fibroids or excessive uterine bleeding. This, too, is true in many cases, but not in the empirical way it has always been used, but because, in removing the uterus, we have removed the focus of infection which was an etiological factor in the hypertension in that particular case. Even with a subtotal hysterectomy there is sufficient interruption of blood and lymphatic supply to the cervix, with resulting atrophy and lessened absorption, to be of definite benefit to the patient, but here I would put forward the much greater symptomatic improvement to the patient by including the almost invariably infected cervix in the extirpation of the uterus.

I have seen many women with records of periodic examination going back for many years showing the presence of essential hypertension, who have developed evidence of some infection in the cervix. This was treated with cauterization, and where no other treatment was given regressions of pressure from 15 to 40 or 50 points occurred and the pressure remained at this lower level. I feel that in all of these cases, and in myocardial anginal and cardio-renal disease, this focus of infection should be sought out and eliminated, as with any other evident source of infection.

C. *Those with general systemic symptoms together with gross pelvic pathology.*

This group of patients include those who have had a hysterectomy for some gross pathological condition in the pelvis. Most of these women have numerous symptoms, many of those already enumerated, which are quite apart from the symptoms due directly to the fibroids, excessive bleeding, etc., for which the operation is being done. It is a common thing in these patients, when you see them six months after operation, to find they have not only lost their pelvic pain or pressure symptoms, but that their whole general health has been improved, better color, more energy, no little aches and pains, and they state emphatically that they haven't been as well in years. In examining the uterus after removal, the cervix is always the site of a chronic cystic cervicitis, varying in degree, but always infected. It is the removal of this very definite focus of infection, which is a large factor in the improved general health of the individual. This finding is also a strong argument in favor of a total hysterectomy, where a hysterectomy has to be done; more so, I think, than is the possibility of the development of a cancer in the remaining stump, though this should always be borne in mind. If there is pathology of the body of the uterus or adnexa which is sufficient to warrant hysterectomy, then the focus of infection in the cervix should be removed to give the patient the full benefit which should be derived by her from such a major surgical procedure. In chronic pelvic inflammatory disease, with old pus tubes and a frozen pelvis, where the tubes and uterus are removed, it will be found that where the cervix is removed the patient is a great deal better off in her general health when seen some months later. If, because of technical difficulties in these old inflammatory pelves, the cervix is not removed, it should be most thoroughly cauterized.

Treatment. Hot douches, medicated douches, tampons, silver nitrate diathermy and Elliot treatment are only aids in treatment. The infection in this organ can only be eliminated with the use of cautery or its entire removal at operation. Visible and palpable cyst must be opened with the cautery and destroyed. The cervical canal, if necessary, dilated and then cauterized. Frequently the cervix, on visual examination, will appear to be perfectly clean, but on dilating the canal and cauterizing well up inside, numerous infected cysts are opened and pus discharges freely around the cautery point. This procedure should be repeated at monthly intervals until the cervix is free of infection. Stenosis of the cervical canal following cauterization is due to too enthusiastic use of the cautery at any one treatment, and burning into the muscular layers near the internal os, with resulting scar tissue formation and contraction. If ordinary care is used this complication will not arise.

Conization, or coring out of the cervix by means of the high frequency radio cautery cold cutting loop, is a most satisfactory method of treatment giving the same good results, but with a much more expensive piece of apparatus.

If this should all sound to you like a pet enthusiasm of my own, possibly you are right, but I hope that I have been able to give you some evidence in support of my belief that, in those conditions mentioned and many others in which the search for and eradication of foci of infection plays such an important part in their treatment, the cervix should be included.

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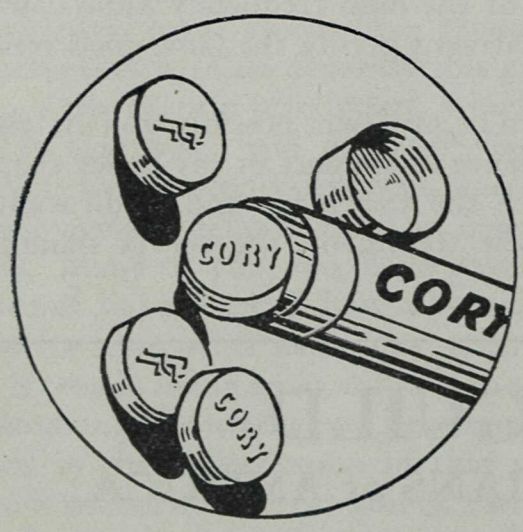

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*Hawkinson, L. F.: J.A.M.A. 111:390 (July 30) 1938.

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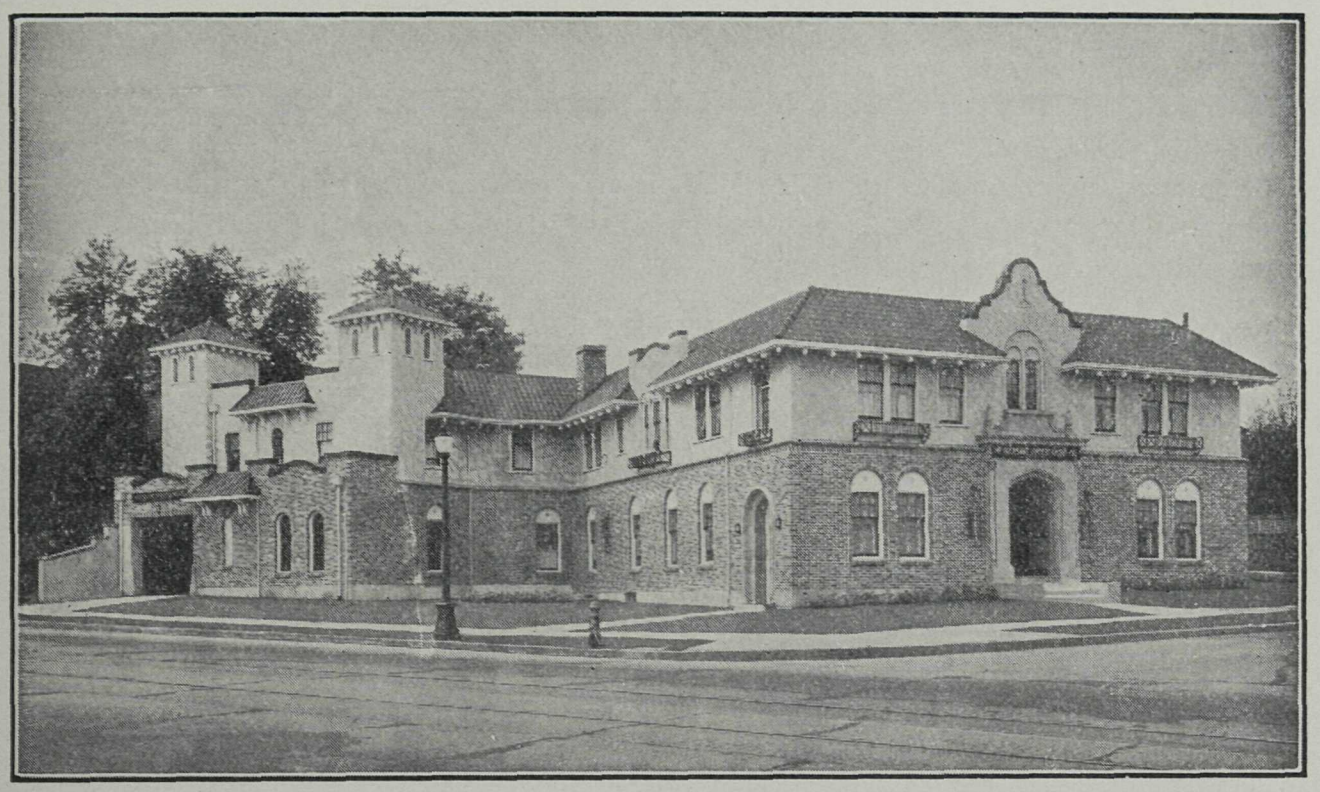

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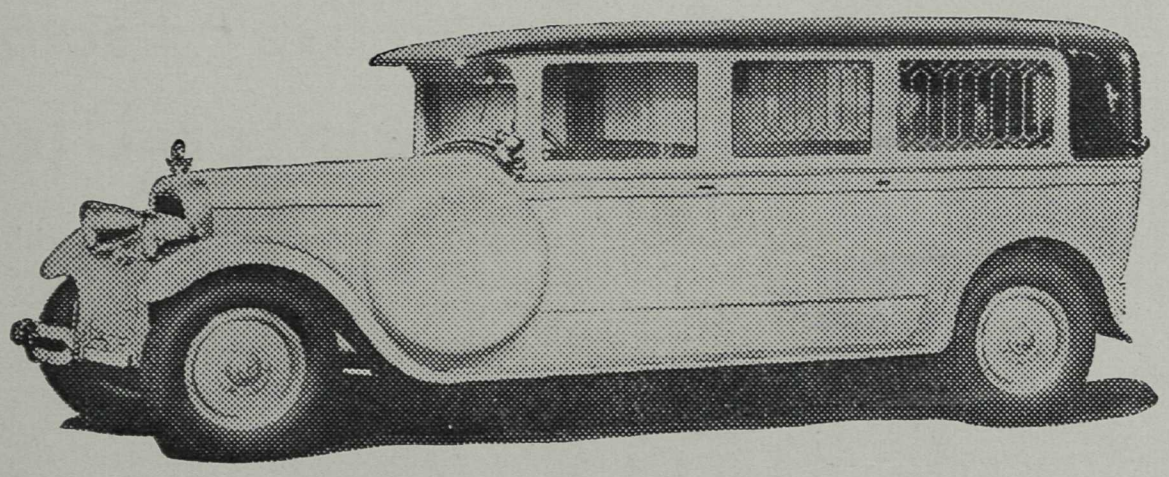

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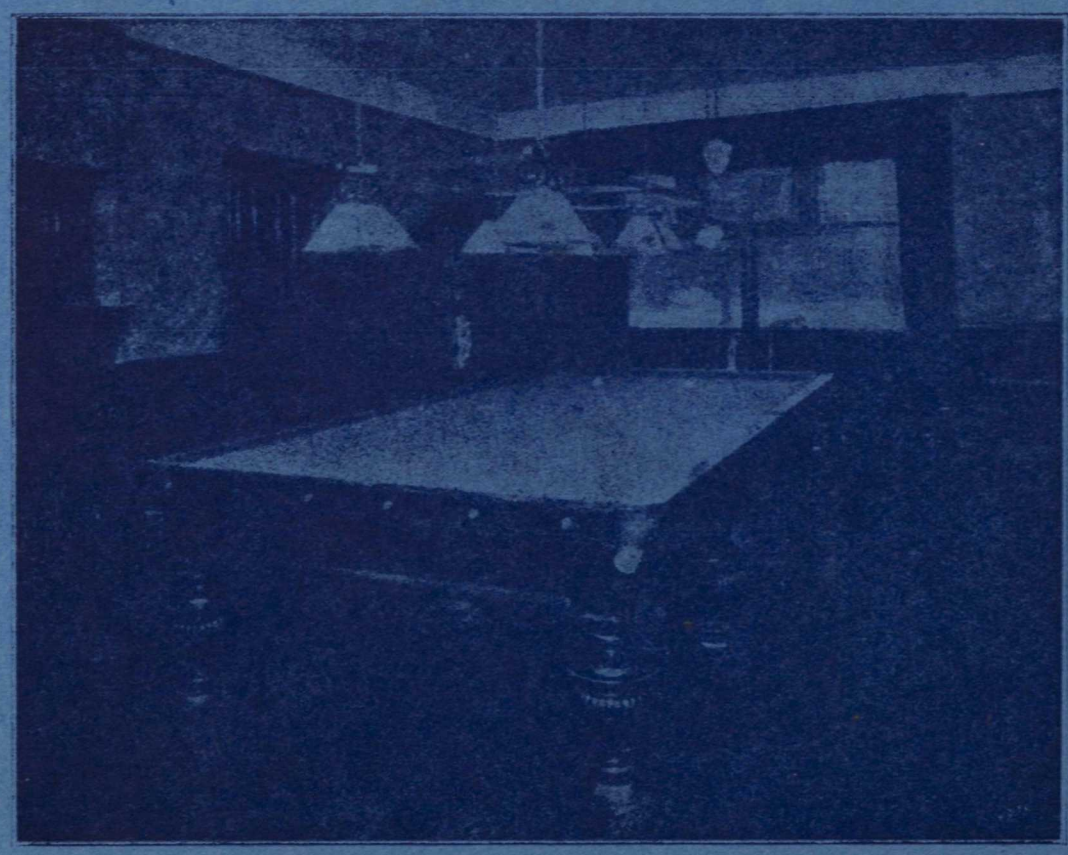

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