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BY

JAMES STEWART, M.D., President,

HALIFAX.

Friends and Colleagues:—My first duty is to thank you for the honour you have conferred upon me in electing me to preside over this meeting.

I can assure you that my pride in this great honour is tempered by a feeling of very great responsibility, and a sense of marked inaptitude for the duties of this position. And in thanking this Association for an undeserved honour I wish to thank especially the most earnest, energetic and cheerfully laborious Executive which any President ever had.

I wish to express my sense of obligation for the presence of His Honour the Lieutenant-Governor, whose more than eighty years of strenuous and honourable life give exceptional value to the kind word of appreciation in which he has just welcomed our Association to this city.

Permit me also to express my pleasure in having on the platform my dear old friend and colleague, the Hon. D. McN. Parker, one of the founders of this Association.

And now I bid you welcome, welcome to this picturesque Province of Nova Scotia, and to the City of Halifax.

I bid you welcome on behalf of the medical men of this province; for when it became known that the Canadian Medical Association was to meet here, there came in from all over the province, from the county societies and from individual practitioners, expressions of a desire to have a share in your entertainment, and therefore it is that we are here to-day as the guests of the Medical Society of Nova Scotia, and that we have listened to the warm welcome of the President.

In welcoming you to this place I should perhaps say a few words of introduction to a city and a province new, perhaps, to many of you.

If you are interested in history, you will find much here to occupy your attention.

In the early morning mists of our history we see Leif Ericson, in his Viking galleys steer along our coast. Four hundred years ago the Cabots took possession of these regions for King Henry VII. And then for two hundred years the intrepid navigators of Old France, DeMonts, Champlain, St. Denis, LaTour, explored these bays and headlands.

If you can spare time to visit Annapolis you will find traces of the French occupation, and see still in good preservation the old powder magazine, the oldest European masonry in America north of Mexico, built of stone brought from France. Midway in the province, you come to Grand Pré, with its crowded memories of the past, and its wide acres of fertile dyke lands which we owe to the industry of the early French settlers. And in the extreme east you will find the historic ruins of Louisburg, where the sea birds cry over the rain swept turf which covers many a gallant heart. Nova Scotia may, indeed, claim its share in thrilling memories of "old unhappy far off things and battles long ago."

We can point with pride to the distinguished names of many Nova Scotians. I shall avoid the troubled waters of political life and will mention only the fact that two of the most distinguished college presidents in this country were Nova Scotians, viz., Sir J. W. Dawson, of McGill, and Rev. G. M. Grant, of Queen's. In literature we are proud of the reputation of Haliburton. The hero of Kars and the defender of Lucknow were both Nova Scotians. Our shipbuilders and our sailors have carried our name round the world, and it is safe to say that there are few ports in the world where you may not find a Nova Scotian sea captain.

This city of Halifax is crowded with historic memories. It was up this harbour that the ill-fated squadron of D'Anville, shattered and storm tossed, came to anchor, to meet a more deadly foe than wind and wave in the pestilence which destroyed hundreds of brave sailors. It was here that Cornwallis, stout soldier and sagacious statesman, arrived in 1749 and laid the foundations of this city. St. Paul's church, built in 1750, is the oldest Protestant church in the Dominion of Canada, and the old churchyard of St. Paul's is one of the most interesting cemeteries in this country. In it were laid side by side the heroic dead who made the names of the Shannon and the Chesapeake famous.

In the old Provincial Building, where we hope to meet this evening, Mr. Lawrence Kavanagh stood in 1827, the first Roman Catholic mem-

ber since the Reformation to represent a constituency in British dominions.

And there is another old building here, which, to my mind, should be full of interest to all Canadians. It was a Nova Scotian, Sir Samuel Cunard, who had the enterprise to start the first line of transatlantic steamships, and there are men in Halifax to-day who remember when the *Britannia*, the first Cunarder, came up the harbour and to the shipping office of S. Cunard & Co.

And may I draw your attention to our geographical position, and to our incomparable harbour? It has the largest dry dock on this side of the Atlantic, and it is defended by one of the most powerful fortresses in the world, and at any hour of day or night, summer or winter, in any state of tide, the largest and swiftest ships afloat may come alongside the pier, or leave it punctually, without delay or interruption.

I trust that when this Association meets next in Halifax it will find the western terminus of the fast Atlantic service, safe in the keeping of the "Warden of the Honour of the North."

Finally, bear with me if I point to our Educational Institutions. Dalhousie University, the only undenominational college in the province, has not only supplied professors to several universities in the United States, but furnished a distinguished successor to the renowned Tait, of Edinburgh, and only the other day, sent one to the University of Birmingham. We have also a medical college whose graduates are now dotted all over the Dominion and the United States, reflecting credit on their province and their Alma Mater. There is the Institution for the Deaf and Dumb, where results are obtained equal to those of any similar institution anywhere; and finally we have this School for the Blind, in the hall of which we are met, which is presided over by Dr. Fraser, a gentleman second to none on this continent in the skill and success of his methods, and whose marvellous personality overcomes all disabilities and inspires all who come in contact with him.

This is not the first occasion on which the Association has met in Halifax.

In 1875 the Association first met here, and again in 1881, when the General Secretary was a young Montreal physician, whose name is now a master word in the Schools of *Æsculapius* the world over—the Regius Professor of Medicine in Oxford. At the meeting of 1881 the attendance was 53, to-day we have already registered over 200.

It is only fitting that I make reference to some of those who were with us then and who to-day are not. The President was Dr. G. E. Fenwick, of Montreal, a distinguished surgeon, who occupied the chair of Surgery in McGill University for fifteen years. The Vice-President

for Nova Scotia was the late Dr. R. S. Black, one of the leading physicians of Halifax for many years, a man of wide culture, and especially familiar with Spanish history and literature.

There are two names to which I wish particularly to refer in this place on account of their connection with this province and their interest in this Association. The late Dr. Edward Farrell was one of the foremost citizens of Halifax, and took a leading part in our political life, having been a member of our legislature. He was one of the founders of the Halifax Medical College, where he held the chair of Surgery from its foundation until the time of his death, and his admirably lucid, well ordered and emphatic style made him one of the best lecturers whom I have ever heard. He was surgeon to the Victoria General Hospital for thirty years. He took a keen interest in the subject of tuberculosis, especially in the organization of methods to prevent the dissemination of the disease, and was appointed by the Dominion Government to represent us at the Congress on Tuberculosis in Berlin. And it was in the discharge of his duty as a member of a Commission appointed by our local Government to select a site for a Sanitarium, that he contracted his fatal illness, through exposure to cold and wet when driving in the country; and on the first day of this new century he passed away from among us; but the brave and cheerful spirit, the ready wit, the warm kind heart are memories that remain.

And what can I say of Dr. Wm. Scott Muir? I may say, I believe, that no member of this Association was better loved or more heartily welcomed to its meetings. He had been a vice-president, and upon at least one occasion he was nominated for the presidentship, but generously insisted on giving way to others. He was a very regular attendant at our meetings, and his stalwart figure and cheery voice had become familiar to the profession throughout Canada. His business ability and his knowledge of affairs made him invaluable in committees, and his contributions to the scientific work of the Association were marked by keen observation and practical common sense. He was my own dear friend and I shall not trust myself to say more of what his loss has been to us.

And so one by one, just as we learned to value them more, our comrades fall, and what can we say but

“ Fare you well:

Hereafter, in a better world than this,

I shall desire more love and knowledge of you.”

It is, perhaps, a weighty sense of the responsible position in which you have placed me that gives to my thoughts to-day a somewhat serious turn.

I look upon this great assembly, I think of the years of study, the expensive education, the physical and intellectual toil, the laborious days and anxious nights, and when I consider the results I am tempted to ask—what is the good of it all? We toil to save, and how often it is that the valuable lives, the bread winners, the wise, the strong, the true, are taken, and we succeed in saving the idle, the dissolute, the degenerate. There is not only a sense of futility, there is horror in the thought that our art may in unworthy hands be degraded to be a servant of evil passions.

And have all these then—our brothers and our forebears—died in vain? Have their lives been wasted, and would it have been better had they had no part in aught that's done beneath the circuit of the sun?

Perish such thought! These dark imaginings are nothing but rank pessimism, and pessimism is fatal to us of all men. Of all men the medical man must be an optimist. If our work is to save and prolong life, we must believe that life is something worth having and worth keeping, or we are not true to ourselves, and are false to other men.

Now, what is the value of life? Character. And what makes life worth having and worth keeping?

The more we reflect upon human life in all its manifestations the more do we become convinced that its true criterion is character. To the unthinking it may seem that this subject is outside our province, and that health and character are in different categories. But we cannot dissociate the physical from the intellectual and moral elements of our nature. As anatomists we may study the physical framework of man, but as practitioners of medicine we must consider the living man as body, soul and spirit.

Our nature is threefold, and health and character pertain to each component, the Physical, the Intellectual, and the Moral. We may admit that so far as we can see perfect physical health may exist with feeble intelligence and degenerate morals, but the ideal condition for which we should aim is the balanced blend and perfect equilibrium of all these elements. And even though at first glance it may seem that one component may attain perfection while the others are defective, a close observation convinces us that it is not so. The brilliant intellect is hampered in its working by the diseased body which forms its transient tabernacle, the "eye sublime" subdued to that it works in by a vile spirit, loses its brightness, and

"Faults in the life breed errors in the brain,
And these reciprocally those again."

And, as Maudsley put it the other day at the British Medical Association, "Mind works in every function of the body; a sound body is the foundation of a sound mind and the lunatic is a lunatic to his finger ends." We cannot think soundly about life if we ignore this essential and indissoluble trinity. Experience tells us that in our work of detecting, preventing, eliminating disease, we cannot treat our patient to advantage if we regard only his physical condition and neglect consideration of his mental equipment and moral proclivities. Indeed, the manner of man our patient is determined more by those invisible forces than by his corporeal form, or, as we have it in the sayings of the Wise Man, "As he *thinketh* in his *heart* so is he."

And it is with the community as with the individual: that which makes a nation great is not the wealth of its people or their intelligence, but their good name. It is because I believe that the medical profession may have a large influence in moulding the spirit of a nation, that I wish in the hour which custom allots to me here, to offer a few remarks on National Character and Public Health.

How may our national character help or hinder us in our work, and how may we, as the guardians of the public health help to make or mar our national character?

The public health laws of a country will depend largely on the character of the people. The character of the people will be conditioned largely by their public health, that is, by that standard of health of the individuals composing the nation, which, as a national ideal, all the people are interested in and willing to make sacrifices for. This is Public Health in the largest view.

And first let us consider some of the features of national character which may influence public health.

There is *love of liberty*, and a free people is usually a vigorous and healthy people.

But there is a liberty not according to knowledge. When an individual claims the right to act according to his judgment in matters of which he is profoundly incapable of judging, his boasted liberty may prove a perilous possession to himself and his neighbours. When a community refuses to be bound by laws which Sanitary Science has declared to be necessary, it abuses its liberty and may bring serious damage upon itself. The laws of health cannot be broken with impunity. And this spurious love of liberty frequently stands in the way of sanitary reform.

We have a striking instance of it at present in the stupid rebellion against sanitary laws shown by many communities on the lower Mississippi in the present epidemic of yellow fever.

From the thought of liberty to that of bondage may seem a strange step, yet the next national characteristic which I mention as having an influence on public health, namely, the worship of material things and the feverish haste to accumulate wealth, lays upon us a bitter and grievous bondage. The public, and the representatives of the public are too apt to regard with impatience if not with scorn the claims of any interest which does not seem to have immediate or direct bearing on the great national occupation of money making.

There is an epigrammatic expression in the works of Aristotle which might well be inscribed in letters of gold over the council chamber of our legislatures and our boards of trade. It may be freely translated thus, "It is not seemly for a free people to be always seeking for cash returns."

I think the Greek philosopher saw the glitter of the golden manacles and would warn us, if we value freedom, to set our affections on other things than gold.

This national characteristic, disinclination to invest in medical securities, is perhaps due to various things. It is partly due to ignorance, to an incapacity of appreciating scientific teaching, to a hesitation in trusting the expert opinion of Science—for which, perhaps, Science herself is somewhat to blame. It is not entirely the fault of avarice. When our people are convinced that any measure is for the public weal, they are generally willing to aid. And I may, perhaps, draw attention here to the fact that the first Public Sanitarium for Tuberculosis, the first in Canada erected as a Government work, is now in operation at Kentville, in this province.

But, as a rule, there is great difficulty in inducing corporations and municipalities to expend a reasonable sum in carrying out the details of a Public Health System, to pay for water supply, drainage, sewerage, removal of garbage, disinfection. It is not too much to say that apathy in regard to questions of public health is a national characteristic.

Like the Sybil with her precious scrolls Hygeia comes to Demos, and Demos will not buy.

And the yearly tale of death and disease, preventible by sanitary measures, increases, and perhaps the only effectual clarion to rouse the indifferent will be, as it has been before in the world's history—a pestilence.

Possibly if the public could see the mere financial loss incurred by preventible diseases, the loss of time, the inefficiency of workers, the increased rates to maintain the families who have lost the bread winner, they would be willing to give more to the Health Department.

There is a feature of our public life which, I think, may fairly be described as a national characteristic, and that is our tolerance if not encouragement of quackery. I mention it here because I wish to point out the great injustice of this to our profession.

The youth who aspires to the practice of medicine is required by the laws of his country to undergo a certain course of study, tedious and expensive. He has to pass certain examinations and give proof of familiarity with the requirements of his profession. He has to satisfy the authorities as to the integrity of his moral character before he is allowed to begin practice. And now see him, embarking on the practice of his profession. From his window he sees the apothecary's shop, and knows that for one patient who has gone there to have a prescription filled, a dozen go to buy some proprietary medicine. He buys the morning paper and finds one-tenth to one-fifth of the space for which he pays taken up with advertisements of nostrums, often with testimonials signed by otherwise intelligent and moral people. He dines at his club and hears of nothing but the wonderful cures wrought by some itinerant quack who has never fulfilled one requirement of the Medical Act. Truly Demos loves the quack and seems to have a special spite at him who would practise his profession scientifically in accordance with the noble spirit of the Hippocratic oath.

There are, indeed, many ways in which the traits of national character may influence the health of the people.

In the Report of the Royal Commission on Physical Deterioration no evidence seems to me more interesting than that of Mrs. Close. This lady, who has given her life to the study of domestic conditions among the labouring classes of almost every country in Europe, has no doubt of a deterioration in the physique of the labouring classes in England. And the explanation of this she finds in a diminished sense of duty, a debased ideal of the duties of wife and mother. Love of amusement and the attractions of the theatre interfere with the old fashioned domestic economy. Houses are untidy. Food is badly cooked. Early rising is a vanished virtue. The children are hurried off to school without proper breakfast, and the husband finds in the public house the comfort he is denied at home. The picture is too true and its replica may be found in every town in Canada.

And now how may we in the exercise of our daily calling contribute to the development and growth of national character?

In the first place we should accustom ourselves to remember that the body with which we deal is of value only as the tenement and instrument of an indwelling spirit, and that the health of the body is our

care simply because its ill health may hamper the action of the intellectual and moral energy within it.

When we prescribe diet and exercise let us remember that the luxury and excess and love of ease which are the most potent factors in disease, injure mind and soul as well as body. Let us press the claims of temperance—that true temperance which walks the golden midway, and turns neither to asceticism nor to indulgence.

In the love of Canadian youth for manly exercise we have a most powerful lever for raising the standard of health and morals.

If we are consulted as to occupation, let us sing the praise of the simple life. Civilization is becoming terribly complex, and it seems on all hands to fungate into luxury. And history points a warning finger to the past. When culture joined hands with luxury decadence was already at the door.

This is the age of sedentary occupations, and a large proportion of the ills which we are called to treat owe their origin to the exigencies of the sedentary life. It is not a natural life for man.

Will it be thought very much out of place if I say, let us honour the farmer. His is the only natural, the original and the essential work. There is a moral in the fable of Hercules and Antaeus. It was not until Hercules had lifted the giant bodily from the ground and so broken the magic contact that he was overcome, and the prescription for many of the ills of the body and of society to-day is in the cry "back to the land!"

I have spoken of occupation as bearing on health and character. There is one other fact in our social life to consider, and that is our amusements. Indeed, among some people this question seems to take precedence of work. Amusement and relaxation are necessary, but to give them so prominent a place in our life as they appear to occupy to-day is a menace to the health of the body which they are meant to secure, to the intellectual powers and to moral character.

Pleasure takes precedence of duty, and complainant sophistry may even justify this order. To scorn delights and live laborious days is now considered folly. We amble along the primrose path of dalliance and avoid the "asperous way that leadeth to the house of sanity."

It is a delightful and a hopeful omen to see an interest taken in athletics, and to know that our country takes such an honourable place in all manly exercises. But for one young man whom you will find on the football field, or plying oar or paddle, you will find many who simply waste their time, their only interest in athletics being the spectacular interest of a match or the dubious financial result of a bet.

If we could only influence these young men to take a more heroic, a more manly view of life we should be doing them and our country a service.

Even in our sports there is room for some earnestness, and it might be well if we took our pleasures, as Froissart says our ancestors did, seriously, and sympathized with the spirit of the old English ballad of Ulysses and the Syren.

To spend the time luxuriously
Becomes not men of worth.

* * * * *

. suppose there were
Nor honour, nor report,
Yet manliness would scorne to weare
The time in idle sport;
For toyle doth give a better touch
To make us feel our joy:
And ease finds tediousness, as much
As labour yeelds annoy.

* * * * *

But natures of the nobiest frame
These toyles and dangers please:
And they take comfort in the same,
As much as you in ease:
And with the thought of actions past
Are recreated still;
When pleasure leaves a touch at last
To show that it was ill.

This was the "great spirit of high desire" of the Elizabethan days.

But, in addition to what we do effect in this way in our own generation we and our successors wield a great power in the laws of heredity.

The observation of centuries and the universal experience of everyday life, no less than the laborious and well planned experiments of science tell us that the organism of to-day is the resultant of forces acting in the past, and the diversity of operation of these forces is what gives Nature her infinite variety. To us who see every day the working of the inevitable law which visits the sins of the fathers upon the children, and to whom the phenomena of reversion and atavism and variation are constantly present, to us heredity is one of the great powers of Nature. And we believe that by a careful application of scientific principles to the environment, education and occupation of

our race we may and can exercise a beneficial determinant action on generations yet to be, eliminating disease, stimulating and clarifying mental processes, strengthening and purifying moral qualities.

But, enormous and far reaching as we believe the power to be of the laws of heredity, we must not allow them to dominate us. They are not the forces of a blind, inexorable Fate. These laws are well ordered in all things. When, in view of the depressing influences of the researches of Lombroso and his school, we feel that we are all smitten, when each scans anxiously his brother's face for stigmata, or fancies himself the bearer of a hall mark of some degeneration, let us remember that not only can we, to some extent at least, control the working of the laws of heredity, but so far as we ourselves are concerned, can bid them defiance.

We may—if we will, say, “Evil, be thou my good,” and turn our backs upon our good angel who points us to an honourable ancestry and bids us follow in their path. But, when the Angel of the Pit, with mocking leer, that “Man of Hell who calls himself Despayre,” bids us throw up our hands, tells us we are the captives of circumstances bound in millennial chains, tempts us to give up the hopeless struggle, we may— if we will, say, “stand thou on that side, for on this am I.” We must not forget that divine part of us, that mysterious, undefinable, undeniable power for good or evil—the human will.

Thirty years ago a young man lay in the Royal Infirmary in Edinburgh. Fortune had not smiled upon him, and now, maimed and crippled for life, that life seemed doomed “to dumb forgetfulness a prey.” But not to Despair. The “star of the unconquered will” rose and stood over the lonely bed of William Ernest Henley and inspired these lines, the finest assertion of the Free Will I have ever seen:

Out of the night that covers me,
 Black as the pit from pole to pole,
 I thank whatever gods may be
 For my unconquerable soul.

In the fell clutch of circumstance
 I have not winced nor cried aloud,
 Under the bludgeonings of chance
 My head is bloody, but unbowed.

Beyond this place of wrath and tears
 Looms but the Horror of the shade,
 And yet the menace of the years
 Finds, and shall find me, unafraid.

It matters not how strait the gate,
 How charged with punishments the scroll,
 I am the master of my fate;
 I am the captain of my soul.

“Sir,” said Dr. Samuel Johnson, “the man who has vigour may walk to the East as well as to the West if he happen to turn his head that way.”

Heredity may condemn us to a life of struggle with bodily weakness and mental incapacity, to “defects of doubt and taints of blood.” It cannot chain the free spirit, and he who can say, I will, I will not, is still a man.

We, the members of this Association, as practitioners of the Healing Art are the heirs of a great past. The Masters of Medicine have passed from our world, but their influence survives—their spirits still live.

Nothing is plainer in the study of the lives of the greatest of our predecessors than the influence of great ideals. From the days of the grand pagan whom we call the Father of Medicine and whose recognition of the power of spiritual forces is so clearly seen in the oath which he laid upon his successors, to the great authorities of to-day, we can trace the power of a faith in the Unseen Universe.

Let me quote from the illustrious Pasteur. “Happy he who carries with him a God—an ideal of beauty, and obeys him, an ideal of Art, an ideal of Science, an ideal of Patriotism, an ideal of the virtues of the gospel.”

And if we are to have strength for our work, courage and hope to cheer us in our long contest with all these shapes of foul disease, we must bear in mind the supreme importance of high ideals—of life—and of man.

“You touch God,” said Novalis, “when you lay your hand upon a human body.” The spark of life we tend is a part of the divine, and immortal.

“The soul that rises with us, our life’s star,
 Hath had elsewhere its setting,
 And cometh from afar.”

We deal not with Dust and To-day, but with Life and Forever. And when we realize this our own nature becomes ennobled to that it works in and can rise to still greater power.

We who deal perforce so largely with the material and perishable, if we would keep sight of the indestructible and immortal should culti-

vate a power of detachment, should rise through the cloudy region of a world, and accustom ourselves to the free air and larger atmosphere of a universe.

As the Healer of the world came from beyond its confines so we who would help in the healing should be able to rise into the ether where we can have a proper perspective of Time. We should revisit the ethereal region where with Amiel, we may "Listen to the music of time and the hosannas of the world," or with our own Wordsworth hear "ofttimes the still, sad music of humanity" and be conscious of

"A presence that disturbs us with the joy
Of elevated thoughts; a sense sublime
Of something far more deeply interfused,
Whose dwelling is the light of setting suns,
And the round ocean and the living air,
And the blue sky, and in the mind of man."

And how may we best acquire this power but by the study of our subject—the philosophic study of man.

What our profession requires to-day, even more than an increase in scientific knowledge, is more of the study which gave character to the great masters of the past, and a realization of the grandeur of the divine possibilities in man. True, we see much of the lower nature, weakness and suffering and sin, but we also see in every soul the capacity of Honour, Courage and Love. Let us rather look on these. "Whatever things are true, whatsoever things are pure, whatsoever things are lovely if there be any virtue let us think on these things."

ADDRESS ON OPHTHALMOLOGY.

BY

J. W. STIRLING, M.B.,

Lecturer on Ophthalmology, McGill University.

Mr. President and Gentlemen:—I have to thank you for the honour you have done me in asking me to deliver the special address on Ophthalmology at this meeting of the Canadian Medical Association, and more especially do I appreciate it from the fact that this meeting is held in my native city. One cannot but feel a certain amount of diffidence in addressing such a large assembly of one's fellow workers in our noble profession, but I trust that what I have to tell you may both be of interest to you, and also of some assistance in the prosecution of your professional calling.

I must claim to a certain extent the indulgence of my fellow workers in Ophthalmology, who may be here, if I do not present them any thing very advanced. I would remind them of the fact that I am here to deliver an address to the profession as a whole, and that technical points which would be of interest to them might be far from interesting to the majority of my hearers. Yet what I have to say may not be lacking in interest for them.

I have chosen as the subject matter of my paper a few salient points in the diagnosis and treatment of the more common diseases of the eye. My communication will be almost entirely based upon my own experience drawn from the very large clinical material at my disposal in the Montreal General Hospital.

Conjunctivitis is one of the commonest eye diseases which confronts both specialists and general practitioners during their career; yet in no other ocular disease has there been more room for advance both in the matter of diagnosis and of treatment. Happily during the past few years great progress has been made in both these particulars and the results have been crowned with success. Looking back over my comparatively short career, well do I remember, how in the old hospital days in London there was a routine treatment for conjunctivitis; the diagnosis was strictly limited by the nature of the secretion and condition of the conjunctiva, and the treatment consisted in the use, or I might rather say the abuse of various astringents. In some cases this treatment happily hit the mark, but in others the result was a failure or else a prolonged chronicity. With the promulgation of the germ theory, there was an opportunity for advance, yet but little was done in this direction in eye diseases for some years. Astringents were at this time dropped to a certain extent, and antiseptic lotions took their place; yet a varying amount of empiricism persisted and results were not always so successful as one could wish. During the past few years, however, great strides have been made by Koch, Weeks, Morax and Axonfeld; new germs have been discovered; their relationships to certain forms of ocular disease have been worked out; the conditions especially favoring their development have been studied; the symptoms they give rise to have been noted; and lastly what is of most importance to the clinician, appropriate remedies are being discovered. There is, however, much left to be done, as evidenced, for example, by the uncertainty which overhangs the germ of that scourge trachoma.

To start with be it remembered the conjunctival sac in the new born is held to be free from bacteria, but immediately the infant has entered on its existence in this world, the conjunctiva is exposed to infection

from the atmosphere or from the skin with which it is in immediate proximity at the edges of the lids. The organisms thereafter found in the eye vary greatly in their nature and pathogenicity. Their malignancy depends a great deal upon the resisting power of the organism. It would appear that it is impossible to render the conjunctival sac absolutely sterile, since any bactericide sufficiently strong to effect this would exert a deleterious influence on the eye. The tears exert a certain bactericidal action which may be due to a mere dilution of the secretion, and this is seconded by the muscular action of the lids in winking which force the secretion into the tear sac (the drainage system of the eye) whence it escapes into the nose. One thing is certain: the tears are a bad culture medium for bacteria.

Another important factor in limiting the development of the bacteria in the eye is the temperature of the exposed eye ball. McGillivray of Dundee has worked this out very carefully, and has shown that the surface temperature of the exposed cornea is about 18 degrees below that of the body temperature, whereas if the lids are kept close the conjunctival and corneal surface temperature soon rises thereby favouring the development of many bacteria. In addition to this, of course, the eyelids being closed does away with the mechanical drainage function, to which I have just referred. A good example of this is frequently met with in cases of phlyctenular disease in which the eyes have been kept bandaged. This closure is invariably followed by a marked extension of the disease which can be readily checked by desistence from the use of compresses, and also what amounts to the same thing by the prevention of the child burrowing its head into pillows and cushions.

Of course, when operating on the eye we have to bandage it afterwards, but this is with the sole intention of getting a speedy union of the wound, and by this means preventing the possibility of a deep infection of the eye. As soon as firm union has taken place all closure of the lids should be abandoned.

In my clinic at the hospital all cases of conjunctivitis, tear-sac trouble and ulcerative keratitis undergo a thorough bacteriological examination before treatment is undertaken. Invariably also a bacteriological examination of the secretion is made in all cases before operation.

The invaluable nature of this examination must, of course, be self-evident to you, as a means of diagnosis; as a precautionary measure; as an indication for treatment.

I may perhaps be allowed to describe the very simple process of making this examination, although doubtless the majority of you know it already.

This bacteriological examination short of making cultures of the germs is by no means difficult, and should not be beyond the power of any medical man. The little extra trouble that it entails upon the practitioner will be amply rewarded by the results obtained.

With a small platinum wire, sterilized in a spirit lamp's flame, a small amount of the secretion is removed from the conjunctival sac, and smeared over a glass slide. The great point in the smearing is to tease the secretion well out on the slide; a drop or two of Gentian violet solution is dropped on the smear, after 25 seconds this is washed away with water; a few drops of Gram's iodine solution is dropped on, and left for about 15 seconds; it is washed off with alcohol until no more coloured matter is observed to come away; the specimen is then washed with water and a 5 per cent. solution of safranin is dropped on the specimen, and left for five seconds when it is washed off with water. This is a routine method for the ocular secretions.

As you all know, conjunctivitis has been classified according to the nature of its secretion or conjunctival changes, catarrhal, muco-purulent, granular, and membranous types; but since bacteriological investigations have been carried out there is a strong likelihood that this will be changed. Similar clinical symptoms are caused by very different forms of bacteria, the treatment of which varies greatly according to the bacterial finding.

In the catarrhal type of conjunctivitis we recognise two main varieties, the acute and the chronic, the symptoms of which are too well known to you to need repetition. The vast majority of cases of the acute type has been found to be due to the presence of the Koch-Weeks bacillus and in only a few cases have other germs been discovered. This form of bacillus as a rule attacks children and has even been found in the new born. As a rule these bacilli can only be discovered during the first few days of the disease.

The bacilli lie between the leucocytes and also within the protoplasm. Sometimes they even extend into chains of two or three links side by side; they are decolourised by Gram's iodine; they have an incubation period of two or three days; and the second eye is generally infected two or three days after the first; they seem to penetrate into the superficial layers of the epithelium and not into the deeper tissues; they do not give rise to chronic conjunctivitis. The bacilli appear as very short fine rods staining less deeply than the nuclei of the cells, the ends are rounded and also show a deeper polar stain. I have a specimen under the microscope for your observation.

The treatment of this form of conjunctivitis consists in the applica-

of nitrate of silver, 2 per cent. solution, or the 3 per cent. solution of largin.

Entirely distinct from this form is a chronic variety of catarrhal conjunctivitis affecting mainly the conjunctiva of the lids and especially well marked at the inner and outer canthi; this disease sometimes goes by the name of angular conjunctivitis; there is a slight mucous secretion, the conjunctival papillæ are not swollen, the inner canthus and the lid margins are markedly red, in time the roots of the cilia become affected, as does also the tarsus, the cilia then fall out and the lid margins curl inwards. It occurs at all ages but more especially in adults, and is most frequently met with during the months of June, July and August. Superficial infiltration of the cornea occurs and sometimes even severe purulent spreading ulcers are found which bear a marked similarity to the malignant ulcer serpens.

In 1896 Morax and Axenfeld both discovered a diplo-bacillus which by a series of exhaustive investigations they found to be the cause of this disease. The bacilli are large 2μ by 1μ and generally occur in pairs and chains; they are decolourised by Gram's method after staining with Gentian violet. The disease is very infectious and the bacilli retain their virulence for a long time.

It has been found that solutions of sulphate of zinc have almost a specific action in the cure of this disease, and this may be freely applied even when ulcerations of the cornea arise. The zinc salt is used in a solution varying in strength from a half of 1 per cent. up to 2 per cent., the milder collyria being reserved for those cases exhibiting the greatest irritation. It has also been found that the solutions of the silver salts appear to be inert in the treatment of this condition. I might cite as an example of the action of this drug, even in severe ulcers, one case out of several which have lately come under my observation. The patient had developed an ulcer in the cornea probably of traumatic origin for which he had been treated at his home in the country near Montreal. He thought that his eye had been scratched very slightly with a twig, and did not pay much attention to it until it became very painful, when he sought advice from the family physician; and, treatment failing to check the condition, he came into my clinic at the General Hospital.

I found a large purulent ulcer of the serpiginous type. The condition was so typical that I immediately classed it as an ulcer due to pneumococcus infection and prescribed antiseptics and cauterization of the ulcer, thus you will notice departing from my rule of having a culture taken before starting treatment. The ulcer continued to spread rapidly, so that in 48 hours I felt there must be something lacking either or

both in diagnosis and treatment. Whereupon I had a culture taken; and, to my own surprise and that of the pathologist Dr. McKee, he found the *Morax-Axenfeld* diplobacillus. The treatment was immediately changed and the solutions of zinc sulphate substituted for the antiseptic lotions. The change within 24 hours was marked and the progress thereafter towards recovery was very rapid. I have cited this case in full in order to impress both the importance of the bacterial examination of these ocular conditions, and also its value as indicating the proper treatment.

The metallic salts break up in the conjunctival sac, and act by precipitating the albuminates which agglutinate the enzymes and active agents of the inflammation, the freed acid of the salt thereupon exerting its caustic action.

It is interesting to note that this bacillus maintains its virulence in cultures up to the seventh generation. The diplo-bacillus enters the eye either from the air in a dried or fluid form, or by actual contact; it has been found in the posterior chambers of the nose, whither it may have come from the eye by way of the tear duct. On the other hand there is a possibility of its spreading in the opposite direction from the nose to the eye; this diplo-bacillus retains its activity and power of reproduction after being dried surrounded by a sheath of mucous, which prevents it from really being absolutely dried up. The presence of this germ and its attendant inflammation have been frequently reported in Europe, and its occurrence has been noted a few times in the United States; but as far as I am aware its first definite appearance in Canada has been noted in my clinic at the General Hospital by Dr. S. H. McKee. The disease is by no means a new one but the bacterial cause had not been traced until lately.

Under the microscope you will find several specimens, also a culture on blood-serum of *Morax-Axenfeld* bacillus. After 48 hours in incubator it forms little pits which later coalesce and liquefy.

We have another type of conjunctivitis frequently associated with infiltrations of the cornea, which take on a malignant type, and develop the above mentioned serpiginous ulcer; later on it may be complicated by iritis. The conjunctiva is at first slightly rose red, this is rapidly followed by great swelling and even by the formation of a croupous membrane on the inner surface of the lid; the secretion is watery; and very frequently there are small hæmorrhages; it is especially found amongst young children and young adults; it occurs in epidemics; it is contagious. The germ is found to be a diplo-bacillus lanceolatus, or pneumococcus, as it is sometimes called; they are lanceolate in shape and

tend to form short chains, which with some other points suggest a similarity to the streptococcus family. The treatment of this condition is active antiseptics, and the application of the Galvano-cautery to the ulcer.

Of the purulent types of conjunctivitis that exist, that caused by the gonococcus is the one most frequently met with and most disastrous in its results; it is extremely contagious but the proportion of individuals suffering from gonorrhœa, who develop gonorrhœal conjunctivitis is comparatively small. This comparative freedom from ocular complications in gonorrhœa is very suggestive to any one having much to do with the disease. It would almost appear as if the gonorrhœa itself confers a certain degree of immunity. In addition the escape of the eye from this virulent infection must be partly due to the protection of the lids and the washing away of the secretion by the tears. It would appear as if the resisting power of the individual has a good deal to do with the severity of the disease, since in many cases which have come under my notice I have found that the proportion of gonococci present bears no definite relation to the severity of the disease. Many of the worst cases I have seen showed under the microscope but a few gonococci, whilst in others in which the disease ran what we might call a benign course, great quantities of gonococci were present. It is needless for me to speak about the characteristics of this well-known germ, but there is one point I wish to impress upon you and that is the fact that the gonococcus is capable of invading the intact corneal epithelium, whenever the pus is allowed to stagnate in the eye, hence the great importance in treatment of a very complete and frequent irrigation of the conjunctival sac.

I have found gonococci in the sac many days after the cessation of the discharge, which points to the necessity of continuing the treatment for some time after the apparent cure.

In this connection I wish to draw your attention to an interesting form of conjunctivitis, of gonorrhœal origin, but in which the infection is endogenous, and is frequently associated with iritis. The inflammation as a rule occurs about the period of the appearance of the joint complication of gonorrhœa. As you know the gonococci are carried by the blood stream to the joints and there set up inflammation, and the same type of inflammation may occur in the eyes. It is an irritable form of conjunctivitis; the secretion is watery and has a tendency to chronicity and to relapses. No gonococci are found in the secretions of the eye although they may be present in the tissues; there is considerable pain and photophobia. The local treatment must be mild,

and if there be any urethral trouble present it, of course, must be attended to. The iritis that occurs in these cases possesses also the same tendency to relapses, but I have found that this tendency diminishes greatly with the improvement of the urethral condition. This form of gonorrhœal eye trouble may be considered a sort of general toxæmia manifesting itself in some weak spots. In cases of gonorrhœal conjunctivitis we sometimes get a mixed infection, streptococci and pneumococci being present, and it would appear as though the presence of the streptococci favours an increased severity of the infection.

Membranous conjunctivitis is happily of rare occurrence, at any rate the true diphtheritic type, in fact during my career in Montreal I have not come across a true case of this (although I have seen many cases of membranous conjunctivitis). A few I have seen on the continent of Europe. The severe cases of membranous conjunctivitis which I have met with were at first very suggestive of true diphtheria, but on close investigation they proved to be due either to that allied germ the bacillus xerosis or to staphylococci.

As being of interest in this connexion I might cite a case of my own which I saw not very long ago. The patient was an infant about nine months old, and suddenly developed an intense inflammation in the right eye, a gray membrane formed over the palpebral conjunctiva which could be rubbed off, but left a gray surface beneath it; there was great swelling of the lids; a smear showed a bacillus which was at first considered to be the Klebs-Lœffler diphtheria bacillus. The culture, however, the next day showed this not to be the true Klebs-Lœffler, but like the allied bacillus xerosis (of which I will have a word to say to you later on). There were also straphylococci present. The treatment of this case was simple, the use of argyrol 20 per cent. strength, and mild boric acid lotions. Recovery took place in about three weeks. I will not detain you with any details in regard to the diphtheria-bacillus; but I wish to say a few words in connexion with that very puzzling type of germ the xerosis-bacillus which I found in the above case. This germ is found very frequently in the normal conjunctiva, so that it would appear there must be a predisposition on the part of the patient before it can exert any malign action. Little is known of its true nature and action; it is identical morphologically with the diphtheria-bacillus. It is stained by ordinary analine dyes, and grows on the same culture media forming similar colonies. It is different from the diphtheria-bacillus in not producing an acid reaction in neutral peptone bouillon. Frankel regarded it as a non-virulent diphtheria bacillus which may become virulent when mixed with staphylococci;

others regarded it as simply the non-virulent stage of the diphtheria-bacillus.

A year ago a case of that comparatively rare disease known as Parinaud's conjunctivitis was treated by me. The characteristics of the disease are the huge granulations which develop on the palpebral conjunctiva; these rapidly increase in size; there is also enlargement of the pre-auricular, infra-maxillary and cervical glands. There is a rising temperature, but the course of the disease which is not rapid tends gradually to complete resolution. An elaborate bacteriological examination and report was made by Dr. John McCrae, pathologist at that time to the General Hospital. Pure cultures of a bacillus resembling the Klebs-Loeffler was found during 25 days of active treatment of the eye. This bacillus was not found in the other eye nor in the nose or throat. This bacillus gradually disappeared with the recovery of the eye. It would thus appear that, in this case we were dealing with either a virulent form of bacillus xerosis or else a less toxic than ordinary bacillus diphtheriæ.

dency to form chains, that is, as it were, revering to the streptococcus which I thought might be of interest and value to you. There is no doubt in regard to all these germs that whenever they develop a tendency to form chains, that is, as it were, reverting to the streptococcus type, there is a coincident increase of virulence.

In addition to all that I have told you, it is hardly necessary that I should insist upon your not losing sight of one great point, the fact that the eye is part of the whole bodily mechanism, and that in the local treatment of any eye condition one must not lose sight of the general constitutional state. It is a truism that if the general physical condition is lowered there is a corresponding lowering of resistance to all forms of infection, and this holds true as much in eye lesions as in general constitutional disturbances. A close attention is demanded to general hygiene, fresh air and cleanliness, both local and general, and proper dieting.

The second portion of my address I desire to devote to a consideration of the functional light perception of the eye and to the diagnostic value of it. This is a symptom which is as a rule but scantily described in the text books, yet it is nevertheless one of much importance in the differential diagnosis of certain eye diseases.

What is of much importance is that the said eye diseases are generally of constitutional origin, or secondary to serious trouble elsewhere. Many a time I have wondered if it were not possible to discover some symptom which would be of value as a hint of intra-ocular trouble,

in cases, in which from some reason or other an ophthalmoscopic examination cannot be made. To examine the eye thoroughly with the ophthalmoscope demands continued practice, and very few general practitioners are able to do this, hence it is under these conditions that a symptom roughly pointing to fundus trouble of the eye may be of use. As an example of the value of this, I may mention one case out of many which have come under my observation. The patient was referred to me by the family practitioner in order to have the refraction tested. The symptoms calling for this being headache and diminution of the visual acuteness. On proceeding to examine the patient I found that there was marked nephritic retinitis. This ocular condition is as you know associated with chronic varieties of nephritis in which the general symptoms are occasionally not very pronounced, hence failing an ophthalmoscopic examination of the eye the mistake might be considered possible. It is just in such cases as this that an examination of the light perception, even roughly made, would serve as an indication to the physician of a retinal change being the cause of the eye symptoms, and would call his attention to the desirability of a thorough physical examination.

1. In examining the light sense there are two points which call for consideration, the first being the minimum amount of illumination which will give rise to the sensation of light; and secondly the smallest difference between two degrees of illumination which it is possible for the patient to perceive. The simplest method of testing the minimum light perception is to diminish the illumination of our card of test types, until it just begins to affect our own visual acuity (taking for granted that our own eye is normal). We can then observe whether there is a corresponding or greater diminution in the visual acuity of the patient. In order to test the light difference we use what is known as Bjerrum's or De-Wecker's photometric test types, which I here show you, which consist of Snellens types printed white on gray. The contrast between the letter and its back ground, as you will see, gradually diminish as we descend the board. There is a fraction marked at the end of each line, which will give you an approximate idea of the value of the light difference in any case. The result, of course, cannot be mathematically accurate, but can be approximately enough correct for practical purposes. The main difficulty in these tests is the variation of perceptive power of the retina, occasioned by the state of so-called adaptation. For instance an eye which has been in the dark for sometime is extremely more sensitive to light than one that has been exposed to strong daylight. We can, however, compare our own light perception with that of the

patients, presupposing our own eyes are in an approximately normal condition. The diminution of the light perception is mainly caused by a pathological change in the outer or pigmentary layer of the retina, which layer goes by the name of photochemical apparatus of the eye. Whilst a diminished value of the light difference perception is most marked in lesions affecting the optic nerve, in retinal and choroidal lesions the light minimum is greatly reduced as a rule, and the light difference is but very slightly affected, hence a diminution of the light perception pointing as it does to a lesion of the retina or subjacent choroid (which latter as you know is the nutritive supply for the outer layers of the retina) directs the attention to the possible cause of such a lesion. Now the main causes of the retinal conditions are certain toxic constitutional states, and your attention being drawn to this fact you would institute a thorough general examination of the patient. The nephritic type of retinitis is the one most frequently met with, and as you know the prognosis is extremely grave, the patient's life rarely being prolonged 18 months after the eye lesions are demonstrated.

Next to this we have a diabetic type of retinitis in which we have the same failure of the light perception, but in which the prognosis is not nearly so grave; further, there are the syphilitic types, some of them associated with circumscribed exudations in the choroid and retina, which are characterized also by the distortion of objects looked at, due to the exudate forcing the cones of the retina apart, or by its contraction crowding them together. Another point in the diagnosis of these cases is that the perception of colours is changed, the appreciation of blue being first lost, and this is in marked contradistinction to the failure of vision due to true nerve lesions, in which green is the first colour to disappear. I may mention here as an interesting contrast to these conditions that in cases of hysterical amblyopia you will frequently find the vision is improved under diminished illumination. As to the diminution of the power of appreciation between various degrees of illumination, this condition is most marked in cases of optic atrophy, and would be of value thus to you in the differential diagnosis between lesions purely affecting the retina and those of the optic nerve. I will not dilate here upon the visual field and its indications, but I think I have said enough to draw your attention to a simple differential diagnostic symptom which cannot but be of use to you.

2. We must not be in a hurry to consider all cases of headache and diminished vision as due to a refractive error.

3. In neuresthenic individuals there is a marked susceptibility to any peripheral irritation, so that a very slight error of refraction may give

rise to marked symptoms, such as pain and headaches; while in the case of calm phlegmatic individuals a comparatively high error may cause little or no trouble. The same holds true, of course, in the well-known category of ocular muscular insufficiencies; for, given a slight error in any case there is a more determined and continuous effort to overcome it, with the production of a corresponding fatigue, whilst in high degrees of the same trouble, there being an utter inability to overcome it, the patient makes no attempt to do so and accordingly escapes the trials of asthenopia. I feel obliged in this connexion to speak rather strongly against the custom of allowing opticians to correct refractive errors. If there be any astigmatism present, which is likely in the majority of cases, the proper correction of it is virtually impossible without the use of mydratics. Again, especially in cases of myopia of high degree, there are not infrequently marked retinal changes, which unless properly looked after tend to become worse and end in partial blindness. Many cases occur in which an apparent error of refraction is simply an indication of severe fundal and constitutional trouble, and one I may mention which having seen but the other day is comparatively fresh in my memory and is of interest for two reasons. This lady had been wearing lenses prescribed for her by an optician, which had been changed from time to time during the past year, until latterly marked myopia began to develop. On examining her eyes, I found the light perception greatly diminished; there were some fine opacities in the lens; there were also some fine retinal changes which had evidently been in existence for sometime. Further examination of the urine revealed the presence of marked diabetes. This case is also interesting as an example of the value of the light sense test.

In the words of Hilton Fagge, diabetes being a derangement of the chemical labour of nutrition, you can readily understand how the eye must suffer. The retinal affection in its earliest stages evidencing itself by the alteration of the light sense, and the myopia being as a rule due to the opacities of the lens altering its refractive power.

Astigmatism in its many forms is without doubt the cause of both local and systemic disturbances; bearing this in mind and recognising the fact that only accurate correction is of any value it must be self evident to you that no optician is competent to perform this work. In the words of Maitland Ramsey you have to remember that the eye is not only in the body but of the body.

LEAD-POISONING: A STUDY OF FORTY CASES.

BY

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During the past ten years upwards of forty patients suffering from the different forms of plumbism have sought relief in the wards of the Royal Victoria Hospital. The majority of these cases have been seen with Dr. Stewart and Dr. C. F. Martin, to whom I am indebted for permission to use the reports of such cases as were admitted to them, while the remainder have been under my own care.

A study of forty selected cases has been made with the object of placing on record several interesting features of lead poisoning observed during this time, thus offering a small contribution to the knowledge of a very important and happily comparatively rare form of toxæmia, which threatens a large proportion of the artizan class of all great cities and which, as our cases will show, falls as well upon those not thus legitimately exposed.

With but one exception, the patients were all from the city of Montreal or the immediate vicinity, and ranged from five years to seventy-five years of age. The following table shows the grouping:—

4 under 10 years.

3 from 10 to 20 years.

14 from 20 to 30 years.

15 from 30 to 50 years.

4 from 60 to 75 years.

Of those under ten years, two were five years of age and two were of six and seven years. About 75% of our cases were found in those between 20 and 50 years,—the active years of life. While females are regarded by most authorities as more susceptible than males to the poisonous effects of lead, the figures expressing this relation in so small a series as ours can scarcely be regarded as of much import. Twenty-six of the cases analyzed were men and boys while fourteen were women. There are other factors, however, to be considered more potent perhaps than natural susceptibility, for example, the comparatively infrequent exposure to the poison experienced by women. Then again uncleanly habits and alcoholism which appear largely to determine plumbism in those exposed, are conditions not so common in women as men. When, however, allowance is made for all these factors, there remains sufficiently convincing evidence for the greater susceptibility of the female, alike of the human species and the lower animals.

The study of the habits of the patients with respect to alcohol and cleanliness was most unsatisfactory. Nineteen admitted the alcohol habit, (we realize that this evidence is unreliable). A few (3 or 4) acknowledged excessive drinking. In one instance the patient stated that he "drank occasionally." His wife told another and doubtless a true story of "heavy drinking" and of his being "often drunk." But few of the adults would admit uncleanly habits, but if one may judge in this relation from the condition of the mouth, there were few who were not unclean.

Fifty-five per cent of the patients were working directly with lead as painters and manufacturers of paint, plumbers and glass blowers. The remainder acquired the poison from other sources.

The following table shows the occupations:—

Painters, 14; in paint factories, 6; plumbers, 1; glass blowers, 1; Children, 6; housekeepers, 6; labourers, 2; silk weaver, 1; cabinetmaker, 1; butcher, 1; not stated, 1.

One of those who worked in a paint factory was employed as a cooper. The cans containing paint were packed and shipped in barrels in which the white lead was received at the factory, and the patient stated that in closing up these barrels a great deal of dust was raised in the air. While the hands and mouth may have been thus contaminated yet a favourable opportunity offered for inhaling a considerable quantity of the fine dust floating in the air. In this case the patient's history clearly suggests that the poison entered the system by way of the respiratory tract.

An interesting observation in this connection was made upon a family, four members of which were variously influenced by lead, two of whom succumbed to poisoning of the cerebral type. The family consisted of six, two adults and four children. The father had forsaken his wife, leaving her well nigh penniless to face a rigorous winter with her bed-ridden mother of 75 years, and her four young sons dependent upon her. The two older sons were able to do some work, and were out in the city most of the time. The other sons, aged six and eight years were constantly at home. The mother kept a little candy store in the front of the mean tenement of three rooms in which they lived. The whole family slept in one room, while the other room served as their kitchen and general living room. The fuel for the broken stove, which served the double purpose of cooking their food and heating their rooms, consisted largely of barrel staves, gathered from a neighbouring paint factory by one of the smaller boys and broken up in the house. To make a long and not uninteresting story short, four of this family fell

ill, and one after the other, they were brought into the hospital. Two of them, the mother and grand-mother died with saturnine encephalopathy, of the most acute and pronounced type. The liver of one showing evidence of lead in sufficient quantities to render the diagnosis clear even in the absence of other evidence. One of the boys who were at home almost all the time, presented the symptoms and signs of the neuromuscular type, while the other had but little beyond the gastro-intestinal features of the toxæmia. Beyond slight anæmia, the other boys, out all day, showed no signs of poisoning.

In the case of another housekeeper, the wife of a plumber, it was thought that as her husband kept his lead tubes in the pantry and did some of his work in the house there was a possible chance for poisoning to take place, but it was not clear just how it occurred. The silk weaver, a young woman aged 27, had for several years been using silk threads of various colours, but chiefly those of yellow colour. It was her habit to bite the thread and in this way it was thought she absorbed small quantities of lead chromate. One of the children in our series, a boy of five years, played in his father's paint shop. The butcher used hair dye for his head and moustache, and this possibly was the source of his poisoning. Among those classified under painters is one, an hotel keeper, who unaccustomed to painting, did such work for a few days about his premises and developed the gastro-intestinal type of the disease with the blue line on the gums and the basophile granules well marked in the red blood cells. A housewife addicted to drink used lead acetate as a vaginal douche and developed a grave form of the poisoning. (This, however, is regarded as a doubtful source of the poisoning). There were no cases traceable to drinking water.

Most of our patients (28) were admitted in the first attack. In four cases there had been one previous attack; in two, two: in one, three: in two, four, and in one, five. One had been chronically ill for four or five years, and in another no statement upon this point could be found in the records.

The season of the year when lead poisoning is most common has been commented upon by several writers. Sometimes the warmest months show the largest numbers of cases while the greater frequency of lead colic on board ship is found when those accustomed to northern latitudes cruise in the tropics. Oliver believes, however, that the season of the year has but little to do with the occurrence of the poisoning. It is now somewhat more than ten years, since the first of these lead cases was observed and it is found that in this time fifty per cent of the total number were under observation in the months of November, December,

January and February, while forty per cent found their way to the hospital in the two severest winter months.

January 8, February 8, March 0, April 5, May 3, June 6, July 4, August 0, September 0, October 2, November 2, December 2, total 40.

The mouth in the majority of the patients was foul and the teeth frequently found in a bad state. The blue line was present in thirty cases and "suspected" in two. Thus in seventy-five per cent it was present. There was not even a suggestion of the line in two cases. In five cases no note was made of it. Special care was taken to distinguish between the line so often found at the edge of the gums upon the teeth which are poorly cared for and the characteristic dark blue line, granular in appearance in the gums. In examining painters and those engaged in a paint factory, it is not common to see this line well developed in those who have never had cause to complain of lead poisoning.

The blood of eighteen patients was examined in the ordinary way and stained specimens were made from twelve of these. The accompanying table shows the results.

Red.	White.	Hæmoglobin.	Basophile granules.
3,480,000	8,000	35%	Not examined.
4,470,000	8,000	48	do
3,500,000	10,000	57	do
3,690,000	19,600	53	do
3,090,000	6,800	42	do
1,880,000	10,000	55	Present.
2,880,000	12,000	58	Present.
3,441,000	not stated	50	Present.
2,500,000	4,000	40	Present.
4,000,000	8,600	70	Present.
4,660,000	17,600	70	Present.
3,610,000	10,500	60	Present.
3,240,000	6,000	76	Present.
3,280,000	11,600	85	Present.
2,680,000	11,000	65	Present.
4,480,000	11,400	47	Present.
Not counted.	14,000	55	Present.

An examination of this table shows that twelve cases conform fairly well to the chlorotic type of anæmia. A definite and in some instances a rather high (19,600) leucocyte count is seen. In ten out of the total number of cases in which a blood examination was made, one may say

that a leucocytosis is present, i.e. in 55 per cent. Only within the last two years have we looked for the basophile granules which were recognized by many observers before the work of Grawitz and Hamel, but perhaps never so carefully defined until their articles appeared in 1900. These observers, with others since, have established the relation between lead intoxication and the presence of these granules in the red corpuscles. In our experience in the Royal Victoria Hospital in no case of lead poisoning has our search for them been in vain, and they are extremely rare in any other anæmia.

All the general types of plumbism have been found among the patients, while a few of the so-called special types are also represented. By special types is meant lead poisoning in children; the type suggesting a wide spread multiple neuritis; the Aran-Duchenne type simulating chronic anterior poliomyelitis and the brachial and anti-brachial types as well.

The cases fall under the following heads:—

Gastro-intestinal	18
Neuro-muscular	11
Cerebral	10
Chronic toxæmia with arthralgia and profound anæmia of the pernicious type	1
<hr/>	
Total	40

Perhaps the most interest clusters about the cerebral group. Ten of our patients were afflicted with "saturnine encephalopathy" and in this group were found the majority of fatal cases. Nine of these cerebral cases are typical, while the tenth presented certain features which lead one to suspect a central lesion antedating the lead intoxication. He was a boy aged seven, who had not walked until three years of age and had never been strong, and throughout his life had been a sufferer from headache. Three months before coming into the hospital he had a general convulsive seizure and afterward his left side was paralyzed and the patient was unable to walk. When seen in the hospital the left arm was paralyzed, the fingers slightly flexed and the wrist flexed on the forearm. He had several convulsions and the spasmodic movements were more marked upon the left side. He died with a diagnosis of saturnine encephalopathy, having the pallor and the blue line characteristically marked. It was thought that this case might illustrate an observation which one finds in some of the German books on cerebral plumbism,—to the effect that at times the poisoning with lead serves

but to accentuate or aggravate a cause or a condition already there. In this case one may reasonably think upon cerebral cyst or tumor, such as v. Jaksch has described.

The mode of onset in these cases showing central nerve disturbances is variable. In some instances warnings of the poison have come in colic or headache or general weakness. Gradual failure of vision was the first symptom noticed by one patient; weakness and nervousness and inability to walk, with a sudden epileptiform seizure marked the onset of two cases. Headache and semi-stuporous state were found in another. Three had the convulsive seizures first, in the midst of alcoholic excesses; and in two of three cases for a time the picture might well have been that of alcoholism with delirium tremens.

In two of these cases, lumbar puncture was done with the hope of relieving the intracranial pressure, if such existed, and at the same time, to secure some fluid to make yet another test for lead. We may say that no change in the symptoms was manifest in either case after the puncture. In the fluid from one patient no lead was discovered, while the same test applied to that from the other yielded positive results.

Lead poisoning in children has attracted considerable attention, no doubt because of its comparative infrequency as well as its variation from the rule in adults, in whom the neuro-muscular type develops. Putnam has suggested that the more active process of elimination in childhood might explain the rarity of plumbism in the early years of life. In our series there were six under fifteen years of age, four of whom were under ten. Thus fifteen per cent of our patients were children. The blue line was found on the gums of five of these patients. The neuro-muscular type of lead intoxication when developed in children has been found to implicate the muscles of the legs much more than the arms, and in some instances without any wrist drop, whatever. Three of our cases illustrate the correctness of this teaching.

1. R. L., aged twelve (3379), had a double foot drop, and a partial double wrist drop. He was able to extend the wrists but feebly. The extensor muscles of the wrists and hands were all weak, but the brunt of the poison seemed to have fallen upon the tibialis anticus and peronei muscles which are powerless. The leg muscles gave a doubtful reaction to faradism. The progress of the case was slow and tedious. After thirty-eight days in the hospital he went out improved.

2. C. F., aged five (1201). Three weeks before coming to the hospital his parents noticed the little fellow dragging his toes. Then his foot dropped and the steppage gait developed. His feet turned inwards and very soon he was quite unable to walk or stand. The

glutei and tensor vaginæ femoris muscles and to a less extent, so far as one could judge, the erector spinæ groups were atrophied. There was no sign of atrophy in the muscles of the upper extremities. He remained in the hospital for ninety-six days and was much improved.

3. W. O'B., aged six (8587). In this patient the extensors of the fingers were weak, while those of the wrists were fairly strong. The legs were thin and wasted and drawn up, the legs upon the thighs, and the thighs upon the abdomen. So much pain was induced on attempting to examine the muscles that it was impossible to investigate the strength of the different groups. He lay for several weeks without making any attempt to stand, but after gradually regaining this power he soon began to walk and during his stay of 140 days in the hospital he was changed from an irritable whining helpless heap on his bed to a tractable good-natured active boy. In two other children where the cerebral and gastro-intestinal types developed, the nerves and muscles were practically free. In two young men, however, having the cerebral features of the intoxication, there was paresis of the lower extremities in each case.

Types studied more in detail.

1. The neuro muscular type. (1831, 630, 2700).

Under this group there are eleven cases. Three of them were of the upper arm or of the Duchenne-Erb type with paralysis of the deltoid, triceps, brachialis anticus and supinator longus. In one of these, a painter (1831), the muscles of the right shoulder were markedly wasted, especially the supra and infra-spinators. The lower arms were involved, but to a less extent. In this connection it is interesting to note that the patient before coming under treatment had suffered with one or two convulsive seizures. Seven of these under this group were more distinctly of the lower arm type.

There was a unilateral wrist drop in but one case. There was, in this case (1132) also well marked arthritis, and the joints of the upper and lower extremities were especially involved. Paralysis of the left arm was noticed in a child (1791) of seven years who had always been rather backward. The paralysis followed recurring convulsions. The supinator longus has been found implicated in all those of the upper arm type, and definitely in one of the lower arm type. (1124).

Another case, which we have seen fit to classify under chronic lead toxæmia, may be profitably and briefly outlined. We have already spoken of her as a silk-weaver and remarked upon the source of the poison. When she came under observation she had been ill for four years. The onset was marked by epigastric pain and vomiting after

food. Then pains in the upper arms and in the joints of the upper extremities developed. The smaller joints of the hand became swollen, red and painful. Arthralgia and muscular wasting were both severe and extensive.

With variable severity and at irregular intervals for four years, the same attack was undergone, and at one of these when her lower extremities became implicated, the great toe was the seat of the most acute reaction. She suffered from severe persistent occipital headache; and what with gastric disturbances and muscular weakness and pain, she was almost helpless.

There were no tophi, and sensation was normal, although at times numbness was complained of. Deglutition was difficult at one time. Besides the general wasting there was marked atrophy of the extensors of the wrist and of the small muscles of the hands, the interossei and the muscles of the thenar and hypothenar eminences. The hands took on a claw-like appearance and suggested the condition found in chronic anterior poliomyelitis, or a wide-spread multiple neuritis.

Albuminuria was present in fifty per cent (20), of the patients. Casts were found in the urine of forty per cent (16) of the patients. Albuminuria and no casts in about ten per cent of cases, while casts without albuminuria were noticed in but one instance. The urine was examined for lead in but a small proportion of the cases. In eight patients, examined during the last year, the metal was detected seven times. In all we may say that lead was discovered 12 times in our series, but such a statement does not indicate the frequency of lead in the urine.

The eyes in fifteen cases reported upon were in the majority normal; and when changes were present they varied from mere muscular weakness to neuro-retinitis and optic atrophy. The very important manifestations of lead poisoning found in the eye, we must leave to the specialist to discuss.

The diagnosis of the majority of these cases has been a very easy matter. Two of the cerebral cases were in the hospital for so short a time and the history up to the time of their death was so shrouded in obscurity that only after another patient came from the same house was a diagnosis clear. So much diagnostic importance now attaches to the finding of the basophile granules in the red blood cells, in obscure cases of coma that we may be better able in the future to get a clue from this simple method of investigation. Cholecystitis was the diagnosis in one case during the first day in the ward. Appendicitis has been suspected in but few instances. One can readily understand the difficulties that

might arise here. A case of plumbism may be complicated with appendicitis. Indeed a recent writer suggests that plumbism is one of the indirect causes of appendicitis, due, he says, to the drastic purgatives given to overcome the obstinate constipation which results from lead poisoning. Inflammatory conditions such as one finds in appendicitis are at first sight suggested by the leucocytosis found should one examine the blood. But it must be borne in mind, as we have shown, that leucocytosis of a considerable degree and even fever may be found in the intoxication attributable to lead.

Hysteria is most difficult of exclusion. This was the case in one of our cerebral patients, who after recovering from several convulsive seizures had a paralysis of the right side which disappeared rather suddenly after a few weeks.

Delirium, not distinguishable from that due to alcoholic excess, was present in two fatal adult cases, colouring the true picture of saturnine encephalopathy. So many of those in whom plumbism develops are addicted to drink that this is not a cause for surprise. But the course of the case usually soon decides the diagnosis.

Six of the forty patients died—a mortality of fifteen per cent. In this list there were three women aged 31, 41 and 75 years; two men aged 25 and 28 years and a child of seven years, already referred to in remarks upon the cerebral cases. There was but one patient a man of 28, presenting the neuro-muscular symptoms. He was admitted in his third attack of plumbism. He was very weak and anæmic with signs of nephritis. He died without convulsive seizures. The others in this fatal group succumbed during severe seizures. In two cases, the status epilepticus existed for several hours previous to death.

The treatment in practically all cases has been the same. Iodide of potassium, magnesium sulphate and other purgatives, with strychnine and iron, hot packs and electricity as indicated.

Autopsies have been done upon four bodies, but up to the present nothing has been made out beyond the presence of lead in the brain of one case (the only brain examined, and in this case no lead had been found in the cerebrospinal fluid) and in the liver of three cases. In two cases interstitial nephritis was discovered.

In closing this review of the cases treated in one of our hospitals in Montreal, it may be of some interest to review, from the standpoint of prevalence only, the subject of lead intoxication in that city and to ascertain whether more cases are found in recent years than formerly. Statistics on this point are not forthcoming. To get information from medical practitioners, were it available, would be a tiresome task. The

City Health Board takes notice only of those cases resulting in death, and the record of even these is made with those of deaths due to other poisons. Hence an appeal to this source is useless.

It occurred to me that an examination of the reports of the various hospitals in the city would afford some information—in fact the only information available upon this question—and from the number of cases therein reported, one could judge of the prevalence or frequency of such cases of poisoning and by comparison readily determine whether there was an increase or not in these numbers in recent years.

By combining the figures from the Notre Dame, the Montreal General and the Royal Victoria Hospitals from 1886 to 1904, eighteen years, one finds 204 cases of lead poisoning with ten fatal cases, or a mortality of about five per cent. This number in comparison with the total number of patients treated at these institutions, during this time, is proportionately small.

In 1891 one first finds the hospital reports such that one is able to distinguish the number of lead from other cases of poisoning. Starting then with that date we have included for the sake of comparison, the present year 1905 in our report allowing for the current year a number even above the average for the past four years. We thus have three five year periods for comparison and the following table shows the number of cases in each period:—

1891 to 1895 (inclusive), 60 cases; 1896 to 1900 (inclusive), 80 cases; 1901 to 1905 (inclusive), 49 cases.

It appears from this evidence, at least, and one must admit it is fairly reliable, that cases of plumbism in Montreal are less numerous than heretofore and when we consider this fact in relation to the increase of population, and the marked extension of our industrial work the showing is most satisfactory.

I wish to record my deep indebtedness to Dr. James Stewart and Dr. Martin for permission to use their cases: to Dr. Bruère for his invaluable services in making the tests for lead in the fluids and tissues; and to Drs. McKechnie, Lincoln and Moffat, house physicians, for assistance in looking over the record of our cases.

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TYPHOIDAL PERFORATIONS.

BY

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It is now more than twenty years since Leyden first recommended and Mickulicz carried out the operative treatment of typhoid perforation. In America since attention was drawn to this method by J. C. Wilson in 1885 much has been written upon the subject. Every clinician is, of course, familiar with the ordinary signs which lead to a diagnosis of the condition and the exceptional cases are familiar to very many. No one will doubt, however, that in very many, if not in a majority of the cases, difficulties arise in determining with accuracy the initial symptoms and signs which call for operation.

It is a curious fact that in spite of all that has been written upon the need of differentiating the perforation from its associated peritonitis that the most recent text-books still give among the classical symptoms of perforation those which depend only on the peritonitis. Thus, for example, one finds the following in one of our accepted text-books:

(Read by title before the Canadian Medical Association, Halifax, 1905.)

“Perforation is usually announced by the sudden advent of acute pain in the abdomen quickly followed by the symptoms of collapse; and the fact that diffuse peritonitis following perforation, may develop insidiously must be remembered.” And then follows a classical description of generalized advanced peritonitis. The statements made are, of course, quite in accord with facts; but there seems no idea of drawing attention to the difference between perforation signs and those of the subsequent peritonitis.

It is partly with this in view and from the fact that there have been abundant opportunities of observing these cases in our medical clinic that we have undertaken to analyze the cases occurring in the Royal Victoria Hospital during the past ten years.

Out of 1,230 cases of typhoid fever, perforation occurred in 32 or 2.6 per cent. Of these 32 cases, twenty submitted to operation and five recovered, giving a percentage of 25 per cent. recoveries among the operative cases. In the remaining cases operation was not performed either because the patients were moribund or the operation was refused or, again, because the condition was not recognized as such.

The age of the patient. The average age of this series was 24.4 years. The youngest patient was 4 years old and the oldest 56; so that these statistics bear out what is generally held that the age of the patient is of no importance in making the diagnosis.

So far as the *sex* is concerned it happened that 30 cases out of the 32 were males.

The exact time at which the diagnosis was decided upon, has not been carefully recorded in most cases, but the average time of operation after perforation was diagnosed was 15 hours in the cases that recovered, and 20 hours in the fatal cases.

The occurrence of the perforation after the onset of the disease was on the average about the 15th to 16th day. The earliest recorded case was on the 8th day and the latest on the 39th.

The Onset. The onset itself was usually sudden, and but rarely insidious.

Pain. By far the most important symptom of all was *sudden pain* and this was recorded in more than 84 per cent. of all cases; there was one instance in which this was indeed the only sign present and yet was so characteristic as to determine the advisability of operation. The perforation was found and the patient recovered.

There are so many conditions, however, which may bring on pain that often the difficulties in diagnosis are very great. Miclescu has enumerated a few of these as follows:—faecal accumulations, peri-

TYPHOID PERFORATIONS

Case Number.	Initials.	Age.	Sex.	Day of Disease.	PAIN				ABDOMEN							Time	Pulse.	Time
					Degree of Pain.	Recurrence and Severity.	Diffuse.	Localization.	Presence.	Time after event.	Locality.	Tenderness.	Percussion	Facies.				
8020	J. C.	16	M	19	Severe.	Severe paroxysms.	x	2 inches above pubes	Moderate.	3¼ hrs.	Diffuse	Diffuse.	.....	.....	.....	.....	No change.	..
8146	N. L.	31	M	9	Moderate.	Continuous.	x	Left side most.	Slight.	?	Diffuse.	Diffuse.	Tympanitic.	Diminished.	Hippocratic.	?	Increased.	1
8247	W. T.	28	M	23	Severe.	Severe paroxysms.	x	Just above pubes.	Marked.	10 hrs.	Diffuse.	Left lower quadrant.	Tympanitic.	.....	Hippocratic.	?	No change.	..
8336	D. G.	22	M	27	Severe.	.....	x	.....	Marked.	?	Diffuse.	Diffuse.	Tympanitic.	Absent.	.....	.....	Increased.	6
8604	W. P.	4	M	20	Severe.	.....	x	.....	Slight.	7 hrs.	Diffuse.	Diffuse.	Tympanitic.	Absent.	.....	.....	No change.	..
9043	A. McP.	23	M	20	Severe.	Increased by breathing.	x	.....	.....	.....	.....	Diffuse, right most.	.....	.....	Anxious.	.....	Increased.	2
9157	D. H.	23	M	28	Severe.	Recurred 13 hours.	.....	Lower abdomen.	Marked.	2½ hrs.	Diffuse.	Diffuse.	Dull.	.....	.....	.....	Increased.	2
9582	J. S.	39	M	20	Moderate.	Recurred 16 hours.	x	.....	.....	.....	.....	Diffuse.	Tympanitic.	Dull.	No change.	.....	No change.	..
9598	A. P.	25	M.	18	Severe.	Recurred 2 hours.	.....	Left lower quadrant.	Moderate.	5 hrs.	Left lower quadrant.	Left lower quadrant.	Tympanitic.	Dull.	No change.	.....	Increased.	1½
9639	J. C. S	33	M.	39	Severe colic	Recurred 4 hours.	.....	Lower quadrants.	Moderate.	8 hrs.	Lower quadrants.	Left lower quadrant.	Tympanitic.	Diminished.	Anxious.	8	Increased.	3
109	G. M.	19	M.	17	Severe.	.....	x	Rt. lower quad. most	.....	.....	.....	Lower quadrants.	.....	.....	Hippocratic.	11	Increased.	12
411	F. L.	16	M.	13	Severe.	.....	x	Rt. lower quad most	Moderate.	12 hrs.	Diffuse	Diffuse.	.....	.....	Hippocratic.	?	Increased.	1
593	M. S.	8	F.	8	Severe.	.....	x	.....	Moderate.	?	Diffuse.	Diffuse.	.....	.....	Hippocratic.	?	No change.	..
2603	W. P.	21	M.	34	Moderate.	.....	x	Right side worst.	Slight.	?	Diffuse.	Diffuse.	Tympanitic.	Tympanitic.	Hippocratic.	?	No change.	..
2606	B. K.	22	M.	23	Moderate.	Recurred 4 hours.	x	Right side opp. navel	Slight.	4 hrs.	Right side.	Diffuse, right worst.	.....	Tympanitic.	.....	.....	Increased.	6
3285	J. M.	22	M.	11	Severe.	Gradual return.	.....	Lower quadrants.	Moderate.	12 hrs.	Right side.	Lower quadrants.	.....	.....	.....	.....	Increased.	15
4924	H. T.	16	M.	14	Severe.	.....	.....	Lower quadrants.	Moderate.	6 hrs.	Diffuse.	Diffuse	Dull 6 hrs.	Diminished 6 hrs.	.....	.....	No change.	..
3645	H. T.	32	M.	11	Severe.	.....	.....	Epigastric.	.....	.....	.....	Diffuse.	.....	.....	.....	.....	Increased.	?
4970	J. J.	18	M.	11	Moderate.	Recurred 12 hours.	x	Right lumbar chiefly.	.....	.....	.....	Diffuse.	.....	.....	.....	.....	Increased.	5
5392	J. H. B.	8	M.	34	Severe.	.....	.....	Left lower quadrant.	.....	.....	.....	Diffuse.	.....	.....	Hippocratic.	24	Increased.	24
5583	G. A.	28	M.	10	Severe.	.....	.....	Right lower quadrant.	Slight.	12 hrs.	Diffuse.	Diffuse.	Tympanitic.	Dull.	.....	.....	Increased.	9
6329	H. P.	21	M.	20	Severe.	.....	x	.....	Present.	24 hrs.	Lower quadrants.	Diffuse.	.....	.....	.....	.....	No change.	..
7104	F. F.	37	M.	12	Severe.	Recurred 4 hours.	x	Left side worst.	Present.	4½ hrs.	Left lower quadrant.	Diffuse.	.....	.....	.....	.....	Increased.	12
7462	M. R.	29	M.	32	Severe.	.....	x	.....	Present.	6 hrs.	Diffuse.	Diffuse.	Dull 6 hours	Dull.	.....	.....	Increased.	3
7785	E. H.	37	F.	20	Severe.	.....	x	.....	.....	.....	.....	.....	.....	.....	.....	.....	Increased.	Ons
7829	J. P.	34	M.	14	Severe.	.....	x	.....	Present.	2 hrs.	Right lower quadrant	Above pubes.	.....	.....	.....	.....	No change.	..
6265	W. C.	56	M.	19	Severe.	.....	x	.....	Present.	7 hrs.	Right lower quadrant.	Diffuse.	.....	Dull.	.....	.....	Increased.	7
5200	D. D.	8	M.	9	Severe.	.....	.....	Lower quadrants.	Present.	?	Lower quadrants.	Diffuse.	.....	.....	.....	.....	.....	..
5625	L. J.	23	M.	10	Severe.	Recurred 7 hours.	.....	Lower quadrants.	Present.	18 hrs.	Diffuse.	Lower quadrants.	Dull 20 hrs.	Tympanitic 18 hrs.	Anxious.	18	Increased.	18
7874	G. W	44	M.	26	Severe.	Recurred 24 hours.	.....	Lower quadrants.	Present.	?	Diffuse.	Diffuse.	.....	.....	.....	.....	.....	..
9401	J. L. S.	51	M.	10	Severe.	Continuous.	x	Lower quads. worst	Present.	72 hrs.?	Diffuse.	Diffuse.	Tympanitic.	Tympanitic.	Hippocratic.	72	No change.	..
3456	E. M.	24	M.	13	Severe.	.....	x	.....	.....	.....	.....	Diffuse.	.....	.....	.....	.....	No change.	..

PERCUSSION

GENERAL CONDITION

ks.	Liver.	Facies.	Time	Pulse.	Time	Temperature	Time	Respirations.	Time	Rectal examination.	Vomiting.	Time.	Blood Counts.	Result.
...	...	...	...	No change.	..	No change.	..	Increased.	3	.....	.....	..	7,200, 8,000, 7,200	Recovery
nitic.	Diminished.	Hippocratic.	?	Increased.	1	Drop.	1	Increased.	1	.....	Present.	?	6,900, 7,000, 4,500, 6,400.	Death.
nitic.	.....	Hippocratic.	?	No change.	..	No change.	..	No change.	..	Negative.	.....	..	6,500.	Death.
nitic.	Absent.	.....	..	Increased.	6	Drop.	?	Increased.	12	.....	Present.	48	2,700.	Death.
nitic.	Absent.	.....	..	No change.	..	No change.	..	No change.	..	Tender and full.	Present.	Onset	8,600.	Death.
...	.....	Anxious.	..	Increased.	2	Rise.	2	Increased.	2	.....	.....	..	8,400, 10,000.	Recovery.
...	.....	.....	..	Increased.	2	Drop.	2	Increased.	2	.....	.....	..	9,000, 3,500.	Death.
nitic.	Dull.	No change.	..	No change.	..	No change.	..	No change.	..	High tenderness.	Absent.	..	5,400, 6,800, 7,600, 6,400.	Death.
nitic.	Dull.	No change.	..	Increased.	1½	Rise.	1½	Slight increase	1½	.....	.....	..	9,000, 7,000, 9,000.	Recovery.
nitic.	Diminished.	Anxious.	8	Increased.	3	Rise.	3	Increased.	3	High tenderness.	.....	..	7,400, 7,600, 7,200.	Death.
...	.....	Hippocratic.	11	Increased.	12	Drop.	5	Increased.	7	.....	Present.	1	.....	Death.
...	.....	Hippocratic.	?	Increased.	1	Drop.	2	Increased.	2	.....	.....	..	.....	Death.
...	.....	Hippocratic.	?	No change.	..	No change.	..	Increased.	?	.....	Present.	10	.....	Death.
nitic.	Tympanitic.	Hippocratic.	?	No change.	..	No change.	..	No change.	..	.....	.....	..	.....	Death.
...	Tympanitic.	.....	..	Increased.	6	.....	..	Increased.	6	.....	.....	..	.....	Death.
...	.....	.....	..	Increased.	15	Grad. drop.	..	Increased.	3	.....	Present.	3	.....	Death.
hrs.	Diminished 6 hrs.	.....	..	No change.	..	No change.	..	No change.	..	.....	.....	..	.....	Death.
...	.....	.....	..	Increased.	?	Drop.	?	Increased.	?	.....	Present.	?	.....	Death.
...	.....	.....	..	Increased.	5	Rise.	5	Increased.	5	.....	Present.	Onset	.....	Death.
...	.....	Hippocratic.	24	Increased.	24	No change.	..	Increased.	24	.....	Present.	24	.....	Death.
nitic.	Dull.	.....	..	Increased.	9	Rise.	?	Increased.	6	.....	Present.	4	12,000, 12,000, 13,500, 33,000	Death.
...	.....	.....	..	No change.	..	No change.	..	No change.	..	.....	Present.	24	4,200, 5,600, 4,600.	Death.
...	.....	.....	..	Increased.	12	Drop.	6	Increased.	12	.....	.....	..	.....	Death.
hours	Dull.	.....	..	Increased.	3	Rise.	5	Increased.	3	.....	.....	..	4,200, 6,800.	Death.
...	.....	.....	..	Increased.	Ons	No change.	..	Increased.	Ons	.....	Present.	6	.....	Death.
...	.....	.....	..	No change.	..	No change.	..	No change.	..	.....	Present.	2	9,200.	Death.
...	Dull.	.....	..	Increased.	7	Grad. rise	..	Increased.	7	.....	.....	..	7,000.	Death.
...	.....	.....	..	.....	..	.....	..	.....	..	.....	.....	..	18,000, 22,000, 25,000.	Recovery.
0 hrs.	Tympanitic 18 hrs.	Anxious.	18	Increased.	18	Drop.	10	.....	..	Fullness.	.....	..	.....	Recovery.
...	.....	.....	..	.....	..	.....	..	.....	..	Tender and Full.	Present	Onset	7,500.	Death.
nitic.	Tympanitic.	Hippocratic.	72	No change.	..	?	..	No change.	..	.....	.....	..	10,000.	Death.
...	.....	.....	..	No change.	..	Drop.	6	No change.	..	.....	Present.	7	.....	Death.

typhlitis, injury to the gall-bladder from stone, appendicitis, gastric perforations, tuberculous intestines with perforation, pancreatitis, incarcerated hernia, ileus, peritonitis by continuity without perforation, rupture of the recti-abdominis, and ruptured mesenteric glands or spleen.

Sometimes during the course of typhoid fever there has been more or less constant pain and the difficulties in determining a diagnosis may be great. In one of our patients entering on the 8th day of disease there was a history of abdominal pain from the outset. On admission his abdomen was rigid and distended, there was slight general tenderness and tympanites. On the following day the patient had a slight hemorrhage. There was no alteration in the abdominal signs, except an obliteration of the liver dulness. The leucocytes numbered 5,000. On the following day the abdomen was softer but still somewhat tender, and on the 10th day was distended but not so tender. During the next three days the daily record showed a softer abdomen, still some tenderness, more to the left than the right, the liver dulness still absent, and the blood count normal. On the 16th day the patient had a chill, the abdomen was not so distended, but the patient's general condition became rapidly worse. Death occurred on the following day and the autopsy revealed a peritonitis of several days duration. Just when the perforation occurred in this case it seems impossible to say. The patient insisted from the first that the pain was no different from day to day, while there were but few variations in the tenderness. There is one feature, however, in the records which is worthy of note, viz., the abdomen is described on one day as being softer simultaneously with the development of a tympanitic note over the liver area. While under ordinary conditions but little value attaches to the obliteration of liver dulness, inasmuch as an ordinary distention of the colon may cause this dulness to disappear, yet in such cases there is marked distention of the abdomen and it can scarcely be described as soft. Where the tympanitic note is due to the presence of air in the peritoneal cavity there may or may not be distention; where distention exists, the obliteration is of little value as an aid to diagnosis. The *combination however of obliterated liver dulness and an undistended abdomen* is highly suggestive of the presence of air in the peritoneal cavity. Liver dulness was altered in 10 of our cases. The time of alteration as noted in four cases averaged 11 hours.

Pain is sometimes temporarily relieved either spontaneously or by treatment. In 3 of our series there was spontaneous subsidence of pain. Very often the use of hot fomentations or the administration of an enema gave relief for some hours (as in 10 of the 32 cases recorded),

and the diagnosis may thus be confused. The pain may not recur for many hours (in one case not for 24 hours), and the necessity of watching for developments may cause perhaps a serious delay.

Sometimes, again, the pain in perforation developed gradually and only afterwards became suddenly severe, doubtless from the breaking of temporary adhesions. And again the pain may be so gradual in its onset over many hours or days that confusion may reign.

It sometimes happens and it may be of importance in the diagnosis that pain increases with each respiration.

As regards the *location of the pain*, no district in the abdomen is exempt. In 21 of our cases it was diffuse. In only one was it localized to the epigastrium and in many, perhaps the majority, it was referred to the lower rather than the upper half of the abdomen. It was quite as frequent on the left side as on the right. Radiation of the pain was present in rather a peculiar way in 6 cases. In 4 towards the end of the penis and in 2 towards the rectum.

Tenderness. Tenderness was present at sometime or other in every case and it must be regarded as an early and important sign. Its position is recorded in 27 of our cases and there indicates a great variability in the location. It was diffuse in 18 cases and in the remaining was localized in different portions of the abdomen, chiefly the lower half. The degree of tenderness is recorded in 25 cases being marked in 15, and moderate in 10. An important point in regard to the tenderness is its relation to pain. The tenderness is usually where the pain is felt. It does not usually disappear even when the pain is gone. Pain and tenderness are the two most valuable signs.

Rigidity. Opinions differ widely as regards the importance of this sign in the earliest stages. According to Miclescu nine out of his ten cases showed early rigidity which he regards as nature's protection against the extension of trouble from the perforation. In our own cases it often appeared very late. It developed in 24 of the cases, was absent in several, slight in three, moderate in 18 and marked in 3. The average time of onset after the first signs of perforation was 12 hours in 18 of the cases. In 6 cases the time was doubtful. The earliest rigidity recorded was 2 hours after perforation and the latest 24. As regards location of the rigidity it may be general or local. Where local the rigidity was mostly in the lower quadrants, sometimes on the right and sometimes to the left. It seems, as a rule, that rigidity develops more, and more quickly where, at the onset, the tenderness is greatest.

At all events one may regard these three signs as of chief diagnostic

importance—pain, tenderness and rigidity, and all other aids while of some importance, occupy a role of secondary importance.

The other symptoms. Nausea and vomiting occur in a certain proportion of the cases, in our series in 46.8 per cent. It occurred at the onset in three cases; in others again only after 48 hours. The average for all cases was 10 hours after perforation. In eight of the cases it occurred before six hours.

Sweating is a late sign as a rule. It is recorded in only five of our cases and was then associated with the peritonitis. Hiccough was a late sign and occurred in only three of our series.

The chart cannot be said to give reliable evidence at a sufficiently early stage to be of value in deciding doubtful cases. The pulse, for example, is very often not altered at all till well on in disease. In ten of our series the pulse remained under a hundred until the time of operation; in four others it had always been rapid and when perforation occurred there was no further increase. Analysis of our cases in this respect shows that an increase does not begin as a rule until at least six and a half hours after perforation has occurred. In one case there was absolutely no alteration whatever after 24 hours.

The temperature is still more unreliable. In eight of our cases there was no change in temperature. In ten the temperature dropped though usually some hours after perforation had occurred, the average time being five hours. In seven cases the temperature rose, in four suddenly, and in three more gradually. In the remaining cases it was impossible to say whether or not any deviation in temperature was due to the perforation or whether on the other hand it could not be accounted for by the regular diurnal deviations or as the effect of hydrotherapy.

As regards the respiration there seems to be a fairly early increase in their rate. In 10 of our patients the increase was quite evident within three hours, and in 20 of the cases there was distinct increase within five hours. Eleven cases, however, showed no change whatsoever. There seems to be no ratio between the increase in the respiration and pulse inasmuch as there was sometimes increased respiratory rate without any alteration in the pulse and *vice versa*.

Inspection of the patient is doubtless of some importance. According to some for example the facies lends some aid to the diagnosis. Yet this is unquestionably an unreliable feature. There is as a rule some evidence in the face expressive of anxiety or distress, but there are too many exceptions to this rule. The hippocratic facies, of course, develops late, is associated with peritonitis not with perforation and was found in our cases on an average later than 10 hours. There is some-

thing to be gained by an inspection of the abdomen more particularly when one observes an immobile abdomen with thoracic breathing.

Percussion of the abdomen, as an aid to the early diagnosis is in most cases considered to be of little value. Dulness in the flanks is not infrequently present without perforation and on the other hand it is frequently if not usually absent where perforation has taken place. It is therefore but a slight accessory aid in the diagnosis. In four of our cases dulness in the flanks was observed on an average of 10 hours. Liver dulness and its diagnostic importance have already been mentioned. Rectal examination on the other hand at times seems to give valuable information. Tenderness usually observed through the rectum on the right side first and later on both. In all of seven cases examined by Stewart of Philadelphia positive information was afforded, and in the Royal Victoria Hospital out of six cases in which examination was made five gave what we considered important and decisive information. In one case the examination was negative. It is contended by some that tenderness may be very easily elicited in this way by the finger impinging on the intestine where an ulcer is situated. This experience has not been often present so far as our own examinations are concerned. In connection with the rectal examination one case will illustrate to some extent the diagnostic importance. A patient with typhoid on the 39th day of disease complained of short colicky pains in the abdomen radiating to the penis. The pain did not last long and was quite relieved by the administration of an enema. Three hours later, however, some pain returned and in addition some very slight tenderness in the hypochondrium. Rectal examination, however, revealed distinct tenderness on the left side but careful examination otherwise showed no distention, nor especial alteration in the abdomen except perhaps a slight increase in tension of the left rectus muscle. The blood count was normal, the pulse a little bit increased, but nothing else of importance till four hours later when rectal examination revealed still greater tenderness and on palpation from above there was found a small circumscribed area of tenderness in the left lower quadrant just above the pubis. The leucocytes numbered 7,000. There was no increase in rigidity nor any other signs to confirm our suspicion of perforation. The examination per rectum, however, seemed to justify an exploratory laparotomy which was done and the perforation found and sutured. Miclescu lays stress upon the value of singultus in typhoid perforation.

The blood. As has been already noted by C. K. Russell and others the leucocyte count as a rule is of very little value. Examination was made in 18 of our 32 cases and when made the white cells were found

in only two cases to be above 10,000 until after general peritonitis was well established, even though repeated examinations were made from time to time both before and after perforation was established.

Perforation and Pseudoperforation. How can one decide when to operate and what shall be the signs upon which one can rely? Perhaps one may say as does Stewart that where pain, tenderness and rigidity co-exist one should operate. Elsberg of New York laid down the following rather unsatisfying rule, if the symptoms have lasted 12 hours and the signs and symptoms point more to perforation than anything else and the patient is getting worse one should operate; if, on the other hand, the patient should be seen after more than 24 hours has elapsed and the condition be still good and the diagnosis doubtful one should wait still for a few hours before operation. Although in one of his cases this latter rule proved of value it is doubtful whether such long waiting is justifiable where the diagnosis is at all suspicious. It is true that there are many instances not of a perforative character which give rise to the symptoms of perforation and yet subsequent events prove that conditions of the most various kinds have given rise to the suspicion. Thus, for example, Scott, of the University of Pennsylvania, records 10 cases of pseudoperforation with operation with the following results:—Two, appendicitis; two, left basal pneumonia; two, gastritis, or enteritis; one, hemorrhage, and one quite unexplained. In our own hospitals in Montreal exploratory laparotomies have been done for suspected perforations, and in some cases enlarged mesenteric glands have alone explained it; and in other cases the symptoms arose from a different source. It is interesting to recall that in one case a perforated gall-bladder gave rise to the symptoms as the result of a typhoidal cholecystitis.

CONCLUSIONS.

One cannot accept the definition of perforation symptoms as given in many of our modern text-books. It implies great danger in waiting for symptoms.

The difficulties of early diagnosis are often very great, sometimes insurmountable because the diagnosis seems impossible.

Typhoid fever is always best under institutional treatment, where a surgeon is readily obtained with every facility for abdominal operation.

Not only should careful examination of typhoid patients be made from day to day but careful notes of the daily condition should also be recorded. Too much reliance should not be placed upon the nurse's reports. All this applies equally to the mild and severe cases.

Due respect should be held for any abdominal pain, no matter how slight in the course of typhoid fever, for pain is by far the most important symptom of perforation. There is nothing characteristic about the pain, though it is nearly always sudden in onset. Its degree, location, duration, et cetera, all vary. Severe unaccountable pains often exist in the course of typhoid fever, without perforation.

Tenderness, especially when over the site of pain, is the next most important symptom.

Early local rigidity to be carefully looked for.

Increased rate of the respiratory movements seems to be another important feature. The degree of the respiratory portions is not of much importance. The other physical signs are of minor importance in the early stages of perforation. Though one should look early for local rigidity rectal examination should be made in all cases and should be considered an important aid to the diagnosis.

The signs as exhibited on a chart should not be considered with too much significance for it very frequently happens that there is no alteration whatever in pulse or temperature until many hours have passed. No reliance should be placed upon blood examination. Where doubt exists as to the diagnosis it is far wiser to explore early than to wait until it is too late. Experience has taught that exploratory operations in the course of typhoid fever without perforation are attended with very little risk.

THE FEVER OF LATE (VISCERAL) SYPHILIS—ITS DIAGNOSTIC DIFFICULTIES.

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Introduction.

Mr. President and Gentlemen:

The occurrence of fever in the invasion period of syphilis, is fairly well known, in the secondary stages it is generally known, but that in late, and especially visceral, syphilis a chronic fever may occasionally be present, and give rise to serious diagnostic difficulties, unless the possibility be kept in mind, seems to be not yet generally appreciated by the general practitioner. References in the text-books, both special and general, are either absent or lack precision (the later editions of Osler and Musser's "Diagnosis" may be cited as notable exceptions), and the special work of Musser, Janeway, Fitcher and Stengel has not attracted the attention which its interest and importance deserve.

A case which came under my observation may illustrate:—

Report of Case.

Syphilitic fever of a remittent type, associated with enlargement of the liver and with night sweats, emaciation and other symptoms suggestive of tuberculosis, which for months was suspected to be present. Diagnosis established by the discovery of periosteal node on the rib and by the cessation of fever, etc., on administration of mercury and potassium iodide.

Male, *æt.* 40, of good social position, family history, habits and previous health. His life was sedentary and strenuous. Had an old standing recurrent urethritis with stricture, which had been operated on. Complained of recent slight loss of weight and strength, dyspepsia and constipation. A painless enlargement of the liver had been detected by his medical attendant, a genito-urinary specialist of repute in a city of the first rank. No history or evidence of alcoholism, syphilis or malaria. The man was in fair condition—a trifle sallow, the tongue was coated, the temperature always normal and the pulse quiet. The urine was normal. The liver showed moderate symmetrical enlargement which was noticeable in the epigastrium—it was a trifle tender—the *faeces* were pale and scybalous. The spleen was a little enlarged. A tentative diagnosis of congestion or early fatty cirrhosis of the liver of doubtful etiology was made. Treatment directed to general hygiene, intestinal antiseptics, and bleeding the portal system, resulted in considerable improvement and he returned in a short time to his business. Eight months later the patient returned, his condition much changed for the worse. For two or three months he had been failing in health and strength, had lost many pounds in weight, and had suffered from slight morning cough, severe night sweats and dull pains in the lower thoracic zone, the right shoulder, and over the right apex. Under the suspicion that tuberculosis might be present his chest and sputum had been repeatedly examined with negative results, except that some slight departure from normal had been noted at the right apex. He had been treated as probably tubercular. He was pale and sallow, but not jaundiced. There was anorexia, languor and mental depression. The scanty *faeces* were dry and acholic. The pulse was slightly accelerated. He showed a constant evening rise of temperature to 100°, or 101° F., which fell slightly subnormal by morning, and he suffered from frequent drenching night sweats with occasional slight chills. The liver was moderately and symmetrically enlarged with well defined margin and no sign of tumour or lobulation. It was markedly tender on palpation, and deep respiration was accompanied by marked dragging pain over it—pain which also radiated to the right shoulder and upper thorax. The gall bladder was not in evidence. The spleen was somewhat en-

larged, palpable and tender. There was not friction, hepatic or splenic. The urine was free from albumen and sugar, showed some diminution in the urea, a few hyaline casts and the presence of indican. A urethral discharge was intermittently present in which gonococci were found. No trace of past syphilis (which he denied having contracted) was discoverable; and the blood examination threw no light on the condition. The lungs showed nothing definite, though the slight normal differences seemed exaggerated somewhat at the right apex; stress had been laid on this by his previous consultant. No bacilli were found in the sputum after repeated examinations.

The Diagnosis.

The difficulty in the case seemed to lie in accounting at once for the liver-spleen enlargement and for the fever, and secondly, in eliminating the strongly-suggested tuberculosis as the main or a complicating condition. A review of the hepatic affections which may show fever along with the points above noted seemed to make it probable that the man was suffering from an intestinal hepatitis and splenitis. Of the known common causes of this condition, alcoholism seemed inadmissible. Malarial exposure had been quite possible, but the negative history and blood examination was all against it, and I had been quite unable to detect signs of past syphilis; and had no doubt that my repeated inquiries had been honestly negatived. I was aware that any of these causes of hepatitis might induce fever, yet I allowed myself to be misled, and insensibly laid more and more stress on the general symptoms and the trifling anomalous signs on the right apex. A possible peritoneal tuberculosis of the upper abdominal zone, and the possibility that the chronic urethritis might be giving rise to sepsis also came under consideration and were negatived. In this state of doubt and uncertainty two months were wasted, when the solution of the puzzle was detected in the shape of a small, tender persistent note at the costo-chondral junction. A fresh assault resulted in the admission of syphilitic infection 11 years previously, and tuberculosis was promptly counted out. The results from putting him on quite moderate doses of Hg. and KI were astonishing. After taking 45 grs. of KI the fever had disappeared and did not recur. His appetite promptly returned. The hepatic and other pain disappeared. In six weeks he gained 22 lbs., and in seven the liver, which had measured $6\frac{3}{4}$ inches in R.N.L., had reached the costal margin, and was free from tenderness. He returned to his work fit and well and has remained so, though, as a precautionary measure, he takes a short anti-syphilitic course yearly.

The Literature on the Subject of Syphilitic Fever.

I have since looked up the literature of the subject; Murchison, Jenner and Bäumler have called attention to it. I can only refer briefly to the special work of three men. Musser of Philadelphia—a pioneer in this subject, published a paper in 1892; in the course of which he cites three cases illustrating some of the problems it may present. In the first a visceral (hepatic) case of some complexity the correct diagnosis had escaped two acute physicians. "Both refused to consider the moderate range as of any significance." In the second case, besides "The marked fever which was an expression of syphilis," there were several complicating processes present in the course of a short illness. The fever and concomitant symptoms slowly yielded to iodide of potassium. In the third case, one of visceral syphilis, with involvement of liver and spleen and pain in the right lung. Chills, fever and sweating were present and the simulation of malaria was very marked, and had deceived her previous medical attendant. The fever showed the higher range of the complicating secondary infections and the true intermittent lower range of syphilis itself at different periods. Musser concludes as follows: "It seems proper to infer from the above that fever either continued or intermittent is the expression of the activity of a syphilitic process, and that in an obscure case, its presence, with other symptoms, is corroborative of this specific infective process.

In 1898 E. G. Janeway (New York) recorded six cases (uncomplicated) which came under his observation, in which the fever of late syphilis had led to the diagnosis of tuberculosis.

One man had been ordered by a noted chest specialist to betake himself to a health resort for consumptives because of fever, night sweats, loss of weight and pain in the right side. Janeway's examination showed no "distinct signs of focal pulmonary disease," but, eventually, two ribs were found sensitive to pressure, and a small sinus was found in the neighbourhood of the middle third of the right clavicle. Syphilitic infection was admitted and a cure resulted.

In another case, two of the leading diagnosticians of America had failed to make out the nature of the case, and one had sent the patient to a health resort for tuberculosis—perihepatitis was found. A history of syphilis ten years before was obtained, and the patient regained his weight, and lost his fever and malaise in two months.

A third case had been sent home from a sanitarium as hopeless under the diagnosis of miliary tuberculosis. His fever, sweats and other symptoms rapidly improved after a syphilitic history had been obtained and treatment instituted. Janeway states that in two of the cases he relates, it was not possible to state the situation of the disease after very

careful examination. "We must confess," he says, "that not a few physicians are inclined with the above ensemblage of symptoms to determine that tuberculosis must exist; and having reached that decision, enough of that normal variation of physical signs will be made out to lead to the belief that the explanation has been found in certain changes." *A propos* of this, I may mention that in my own case the slight anomalies at the right apex which had been detected by the patient's previous attendant were finally referred to a slight asymmetry of the shoulder-girdle on that side.

A. Schmidt (of Dresden) has called attention to the risks of diagnosing tuberculosis from the slight departures from normal due to an irregularly-shaped shoulder-girdle, *pseudo râles* and friction sounds made by the edges of the lungs, etc., etc.

The interesting paper of Fitcher, of Baltimore (1901), well summarizes our knowledge of syphilitic fever. He reports three cases from Osler's service at Johns Hopkins. In one of these syphilitic fever of a remittent and intermittent type was for weeks suspected of being typhoid and treated as such. The diagnosis was established by the discovery of periosteal thickening over the clavicles, and by the disappearance of the fever under KI.

In another case chills and intermittent fever led to the diagnosis of malaria—the fever occurring 29 years* after the pulmonary infection. It readily yielded to anti-syphilitic treatment.

Quite recently Krause (of Breslau) has called attention to tertiary syphilis as a cause of protracted fever of obscure origin, and F. Klemperer had occasion to observe two cases within a few months where the most prominent symptom was a protracted fever of a pronounced remittent, and sometimes intermittent type, with chills. The only signs of any lesion were a slight enlargement and tenderness of the liver with traces of icterus. Both patients were promptly and permanently cured by tentative anti-syphilitic treatment. Finally, Stengel (Philadelphia) has discussed the question of syphilitic fever in pulmonary cases. I have not been able to secure a reprint of his paper.

König (Berlin) in a recent paper remarks that physicians are gradually awakening to the fact that affections of the visceral—even when they appear in the guise of functional disturbances or of febrile inflammatory processes—may be traceable to syphilis.

Analysis of Replies received to Circular Letter on Tertiary Syphilitic Fever.

In an attempt to elicit further information, I addressed a circular letter to a number of eminent internists and syphilologists, and now

* Fitcher quotes interesting cases recorded by Phillips and Morgan.

submit an analysis of the answers given to my queries. The replies received numbered 35. From these must be deducted 11—including such experts as Von Leube, Fitz, Allbutt, Byrom Bramwell and Hale White—who regretted their inability owing to inadequate material or indefinite information on the subject to satisfactorily answer the questions. The remaining 24 answered them in whole or in part as follows:—

Q. 1. In your experience is fever a common symptom in tertiary (visceral) syphilis? 7 replied in the affirmative—17 that it was uncommon.

Q. 2. Is it mainly in syphilitic hepatitis that it occurs? 13 replied in the affirmative; 7 in the negative; 3 were doubtful.

Chas. Stockton, of Buffalo, says:—"No; I see these cases with no gross lesion, merely scattered diagnostic lesions. I see hepatitis often with slight fever; severe fever without signs of hepatitis." Fletcher, of Baltimore (with whose views on the subject I am informed Prof. Osler entirely concurs) says:—"As to this point I am not prepared to say definitely, but in tertiary visceral lues I am inclined to think that gummata of the liver and possibly a hepatitis are most often the cause of the fever." Rolleston, of London, says:—"I am inclined to say yes." Stengel, of Philadelphia, says:—"Not mainly; though undoubtedly frequently." Musser, of Philadelphia, says:—"By no means. It can occur in the secondary stage, and I have seen it frequently in glandular, bone and non-demonstrable, but doubtless true visceral syphilis." Eugene Fuller, of New York, says:—"Syphilitic hepatitis does not of itself cause fever, but fever may result from the complications it causes through obstructing the portal venous circulation and deranging the bowels. If a gummatous cavity forms in the liver, streptococcus infection of that cavity may occur and then fever will ensue." Cabot, of Boston, and Norman Bridge, and Lydston, of Chicago, reply, "Yes."

Q. 3. What is the usual range and type of this fever—and is it commonly associated with sweating and other symptoms that might lead to confusion with tuberculosis? Most stated that it was irregular and variable, or words to that effect, *e.g.*; "Intermittent—often with sweats" (Musser); "Hectic in cases of pulmonary syphilis" (Martin); "Low grade, 102°, 103° F., but variable and irregular. No sweating" (Gilman Thompson); "99°, 100° for a few days, then an interval of normal temperature, rarely over 100°" (Cabot); "101°, 102° F. I have not noticed sweating" (Rolleston); "The fever begins insidiously with a range of temperature (diurnal) suggestive of typhoid rather than tuberculosis. It tends to indefinite protraction, and, in my ex-

“perience, is not frequently associated with sweating” (Atkinson); “The temperature reaches to between 101°, 103°. It may be continuous as in typhoid, but is more likely to be remittent or intermittent, simulating malaria” (Osler and Fatcher); “No. Have not observed the special type, but found it distinctly irregular” (Anders); “Where there is some ascites and fever syphilitic hepatitis might be confounded with peritoneal tuberculosis” (Eugene Fuller).

Q. 4. Has it ever led to difficulties in diagnosis as regards the early stage of pulmonary tuberculosis? 11 answered in the negative; 9 in the affirmative; 3 were doubtful.

“Yes; occasionally found difficult to differentiate; but in many cases, while lesion in lung is tubercular, there are evidences in the liver, spleen or elsewhere of syphilis” (Thos. Oliver); “Yes. Erogenetic local (inunction) and systemic treatment usually clears up doubts in diagnosis” (R. W. Taylor); “Yes; see my paper in *Univ. of Pa. Med. Bulletin*, May, 1903” (Stengel); “I have been on the look out for it for twenty years and have not been misled. I can see how mistakes can occur” (Musser); “In my own experience, no. The possibility was kept in mind, but typhoid and malaria have been chiefly expected until the true nature of the fever is revealed” (Fatcher and Osler); “Yes, but not insurmountable” (Stockton); “When two processes co-existed. Also has been mistaken for typhoid, malaria, etc. Careful temperature record will probably show elevation in most cases at periods of activity, and mistakes are naturally likely to occur” (C. W. Allen); “A probable difficulty, but have not met with it” (McPhedran).

Q. 5. In the absence of definite signs and history would the “tuberculin” reaction be of any real value in differentiating, say, between an early syphilitic hepatitis and early tuberculosis?

9 answered in the affirmative; 5 in the negative; 8 were doubtful.

“I do not know that great reliance can be placed on the ‘tuberculin’ test because, even if a febrile reaction ensued, one could not exclude the possibility of the fever being one of the febrile attacks due to the syphilis” (Fatcher and Osler); “Tuberculin would be of value” (Musser); “Not positive” (C. W. Allen); “Yes; of great value” (Gilman Thompson); “Possibly. I have tried it. Unfortunately we sometimes obtain a slight tuberculin reaction in many cases of syphilis which confuses the result” (Stockton); “On a priori grounds I should think that a positive reaction would not exclude syphilis as the patient might well have both morbid conditions. I am not aware that syphilis alone ever gives a tuberculin reaction, hence a negative result would militate against tubercle and in favour of syphilis. As you

probably know actinomycosis has been said to give a positive reaction "with tuberculin" (Rolleston); "I should think the tuberculin test "would possibly be very useful" (J. E. Atkinson).

Q. 6. Is tertiary syphilitic fever usually amenable to mercury and the iodides? 15 gave more or less qualified affirmatives; 2 a qualified negative; 7 were doubtful.

"Yes, although I have seen it last a few weeks" (Anders); "It is "astonishing how these cases clear up under mercury and the iodides" (Osler); "Yes, unless the gumma is suppurating, *i.e.*, shows secondary "infection" (Rolleston); "It is often rebellious to treatment; but "the fever is often limited and irregular without specific treatment" (Gilman Thompson); "Yes, in my experience, there is a ready response "to the administration of iodides" (Futcher); "Usually, yes; but by "no means always" (Paul Thorndike); "Often increased by iodides. "I don't know as to Hg." (Stengel); "Yes, indirectly. Oftentimes the "fever yields most readily to intestinal antiseptics" (Lydston); "Most "assuredly—wonderfully to both measures, but Hg. preferable" (Musser); "Iodides, and to a lesser degree mercury, could have little im- "mediate effect on a complicating fever. These drugs, of course, when "properly administered, would finally cause a resolution, in connection "with the infiltrating elements of these lesions, and, with the establish- "ment of such resolution, complicating conditions which may have been "associated with fever are also apt to subside" (Eugene Fuller).

Dr. Janeway recommends the mixed treatment and does not find heroic doses of either remedy necessary.

Through the courtesy of Dr. Cabot, of Boston, I am enabled to add the following data taken from his cases in the Mass. General Hospital.

TERTIARY SYPHILIS (GENERAL).

Total	16 cases.	
Fever present at times in	2 "	(uncomplicated).
" " " in	5 "	(with complications, e.g., rheumatism,
" " with chills and sweats	1 "	[nephritis, etc.]

SYPHILIS OF LIVER: (GUMMA).

Total	7 cases.
Fever present at times in	6 "
" " with night sweats	1 "

SYPHILIS OF TESTICLE (TERTIARY).

5 cases with no history of fever.

The Cause of Syphilitic (tertiary) Fever.

It is clear that tertiary luetic processes involving the nervous axis, if properly situated, may give rise to fever, and it is equally evident that secondary infections and complications, *e.g.*, suppurating gumma may do so. The moot point seems to be, as to whether there is a true syp-

ilitic fever in these visceral cases—a fever depending essentially on the syphilitic infection. This appears to be the view held by several of those who have written on the subject, *e.g.*, Osler, Musser, Janeway, and Fletcher.

In some of Janeway's cases, after careful examination, he was unable to say where the lesion was, and in the case reported by Sidney Phillips, and in my own, the fever seemed to be referable to the syphilitic process alone.

Bearing in mind the great frequency with which the liver is more or less involved in these late visceral cases, and the probability that slight interstitial and other changes may often be present long before definite enlargement of the organ can be detected, it seems that the views expressed by Crofton, of Chicago, in his reply to my circular might explain a large proportion (possibly all) of them. He says:—"I consider the fever occasionally seen in 'tertiary' syphilis, when not due to some accidental infection, attributable to functional interference with various viscera, notably the liver—hepatic insufficiency—permitting diapidesis of intestinal pyretic toxins into the circulation. The curve of the temperature will depend on the character and quantity of those toxins and of other metabolic poisons that are not properly disintoxicated in the liver and in other disintoxicating glands."

This view, I incline to think, the correct one, *i.e.*, that in the cases of visceral syphilis attended with fever, the specific process so interfered with the functioning of the "liver filter" that leakage of fever-producing toxins into the general circulation is permitted.

Summary.

From the data above mentioned I think we may conclude:—

(1) That late (visceral) syphilis is attended with persistent fever much more frequently than is generally supposed; a fever apart from secondary infections and complications.

(2) That the fever is variable in type; but is commonly of low grade and intermittent.

(3) That it is chiefly in those cases where the liver is involved in the specific process that it occurs; and may be explained by "hepatic insufficiency" permitting the leakage of toxins into general circulation.

(4) That it may be associated (occasionally) with chills, night sweats

* The therapeutic test should, of course, have been instituted earlier. Sodium Iodide was, in fact, recommended as empirical treatment after I first lost sight of the case, but through some oversight was not tried. Later on I was deluded by my belief in the negative history, etc., and by the "bogy" that if tuberculosis happened to be present, harm might result from the iodides.

and emaciation so as to simulate tuberculosis, sepsis or malaria—especially the first.

(5) That the "tuberculin" test is of little value in attempting the syphilis-tubercle differentiation and may be risky.

(6) That no difficulties and errors had occurred in the experience of leading clinicians, the only safeguard is eternal vigilance and an exhaustive search for the stigmata of past syphilis in every obscure case of chronic fever. The therapeutic test, though unscientific, is permissible.

(7) That the fever of late syphilis (apart from secondary infections) is, in the great majority of cases, rapidly amenable to treatment by Hg. and KI.

(8) That the best method is by the "mixed" treatment and heroic doses are unnecessary and may be harmful.

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To all of these gentlemen my best thanks are due for their assistance in this little inquiry.

F. A. Davis Company, of Philadelphia, announce the early publication of a Treatise on the Motor Apparatus of the Eyes, embracing an Exposition of the Anomalies of the Ocular Adjustments and their Treatment, with the Anatomy and Physiology of the Eye Muscles and their Accessories, by Dr. George T. Stevens, of New York. It will be complete in one Royal Octavo Volume of about 500 pages.

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THE LATE PROFESSOR VON MIKULICZ.

To those who had the pleasure of meeting the late Professor v. Mikulicz, chief of the Breslau Surgical Clinic, during his visit to Montreal two years ago, the news of his death in June of this year must have come with a feeling of real, almost personal, sorrow. One of the greatest of surgeons, he was also one of the kindest of men. As in Baltimore there was an Osler-worship, so in Breslau was there a Mikulicz-worship. One saw the evidence of it most plainly in the house-men, the "Assistenten," who, in the midst of the hard routine duty of the regular clinic, found time, practically all of them, to undertake original work, at the suggestion and with the help of the master. His own love of pure science, his own enthusiasm for scientific truth, and, not the least, his own willingness to work,—all these he had the gift in no small degree of inspiring in his juniors. The result was, on the one hand, that the work issuing from Breslau made the surgical clinic there one of the famous ones in Germany; and, on the other

hand, that von Mikulicz of the German chiefs of clinic, was one of the most beloved. Believing that a few details concerning his life will interest the medical men of Montreal, we append some extracts from an obituary notice which appeared in the *Centrablatt f. d. Grenzgebiete d. Med. u. Chir.*, 1905, No. 12.

Johannes von Mikulicz was born in Czernowicz, May 16th, 1850; and died on the 14th of June of this year, that is, in the 55th year of his age. His student days were passed at Vienna, where he obtained his doctor's degree in 1875. At this time he had the good fortune to become one of Billroth's assistants; with whom he remained during the whole of the latter's life upon terms of the most intimate friendship. The seven years of assistantship with this great teacher were marked by a series of valuable "Arbeiten." In 1879 he visited Lister and v. Volkmann, and Listerism found in him a warm advocate; in fact, he worked continually, even to his latest years, upon this subject. To him we owe the casting aside of the old carbolic spray; to him also the recognition of the value of iodoform in wound treatment.

In 1882, being 32 years of age, he accepted a call to the surgical chiefship at Krakau, where he remained four years. From Krakau he was advanced to Koenigsberg; and thence, after other four years, to Breslau. Here he reigned as Professor of Surgery and Chief of the Imperial University Clinic for close upon fifteen years.

Within the bounds of this short appreciation, it is impossible to give even a proper outline of the work accomplished by von Mikulicz. There are few chapters of general or of special surgery that have not been enriched by valuable contributions from his pen. His first publication, the article on rhinoscleroma, is still authoritative. His treatise on genu valgum, bringing order out of chaos, remains a classic. His studies on organotherapy in goitre and Graves' disease, upon symmetrical hypertrophy of the salivary glands; his work upon torticollis; and many others — the list of his "Arbeiten" runs to about 100 — give proof of his untiring zeal and industry. Although, in the best sense of the word, a general surgeon, he seemed to have a special liking for orthopædics. In this branch his name is especially connected with the treatment of scoliosis, the scoliosometer (devised by himself), the gradual reduction of congenital hip dislocation, and the treatment of muscular torticollis.

Mechanically one of the most skilful operators of his time, von Mikulicz devised numerous new procedures in technique which go by his name. Of these the best known are: the drilling of the antrum of Highmore; the method of plastic repair of saddle-nose; the resection of the tarsus and ankle-joint, and pyloroplasty.

With v. Bruns and v. Bergmann, he published the very successful Handbook of Practical Surgery, lately translated into English, in which he himself wrote the section on gastro-intestinal surgery.

It was indeed a sad irony of fate which decreed that he who had done the most successful work of the world in stomach cancer should himself die of that dreadful disease.

His last illness first gave symptoms shortly before Christmas of last year, when he himself discovered a hard mass in the stomach region. Not to disturb the pleasures of Yule-tide for his wife and children, he kept the bitter discovery a secret until after the New Year. Then, going down to Vienna, and putting himself into the hands of v. Eiselsberg, one of his close friends, he asked for a radical operation. Unfortunately this proved to be impossible; laparotomy revealed a cancer of the posterior stomach wall invading the pancreas; and the mass felt by v. Mikulicz proved to be a metastasis. The abdomen was closed without further interference.

He allowed himself but a short time for recovery from the operation; returned to Breslau; and took up his work again with forced energy, struggling nobly to wrest from Death a few more months of work for the benefit of his fellow-beings. But, before long, hæmatemesis forced his surrender; giving up work, he calmly faced the end.

Shortly before his death, he wrote to a friend: "I am leaving life without a grudge, nay, satisfied. I have worked as I was able; and my work has found recognition; and I have been happy."

The name of v. Mikulicz will live after him. He is of the company of those of whom his immortal teacher said: "They live upon the lips of all men."

A WORD OF ADVICE.

It may seem a little early to begin offering advice to Toronto in connexion with the 74th annual meeting of the British Medical Association, which will be held in that city in 1906. We are quite sure that the committee of arrangements do not feel the necessity of troubling us to undertake the labour of their instruction; yet we should be negligent if we refrained from offering a suggestion, even if it be wholly gratuitous. It is this: The President should not convert this great meeting into an association of antiquarians.

The thing has been done before. At the Leicester meeting, the President, Mr. Franklin, began his address from a period at least eight centuries before the Christian era, when King Lear, with his two unprincipled daughters, dwelt upon the banks of the Soar. Dr. John Stewart at the last meeting of the Canadian Medical Association took

up his relation at the time of Lief Ericson and his adventurous vikings, before rising to the elevation and purity of his thought. This length of view is excessive. The President in Toronto could not go so far back; but if he followed so illustrious an example, he might begin with the despatches of the Canadian officials of Louis XIV., all of which are perfectly accessible, and contain full information of the events which centred in Fort Rouillé. It may indicate an excess of temerity on our part to revive this old slander that Toronto was at one time as French and Catholic as ourselves; but the fact is there.

Another method of construction is to begin with the history of medicine, as it appeared amongst the aboriginal inhabitants of Canada, and examine the relics which yet survive amongst the various tribes. We are afraid that this plan also is barred, for Sir Wm. Hingston adopted it in London in 1892, when he gave the address in Surgery. As if this were not enough, Dr. A. A. Foucher, before the Second Congress of French-speaking Physicians of North America, in June, 1904, described the origin and evolution of medicine in Canada. We fear that that page of history is also closed.

There are yet two themes remaining: a history of medicine from the time of Hippocrates until the present, and a review of the progress of the science during the past year or during the lifetime of the speaker. These themes possess many attractions; but Clifford Albutt, before the St. Louis Congress in 1904, made one of them at least his own, in his historical relation of medicine and surgery up to the end of the sixteenth century. Dr. Keen has recorded the progress of Surgery during the nineteenth century in the *New York Sun*, which is, perhaps, not the best vehicle for conveying scientific instruction.

This journal, in common with many others, attempts to give a monthly retrospect of medicine. Too much importance need not be attached to that; but we doubt if it could be done better in a Presidential Address.

We have thus pointed out, in a delicate way, the themes which may be avoided, and we have given the advice most cheerfully. It would be an excess of good nature on our part to suggest others which might be employed. That may well be left to the good judgment of Dr. R. A. Reeve, to whom the task will in all probability fall.

McGILL MEDICAL FACULTY.

Another session of the Medical Faculty is now under way. This is the seventy-fourth, and it began under good auspices. Dr. Jacobi, of New York gave the opening address before a large audience of professors and students. What he said was full of interest, and we expect

to have the privilege of publishing the address in the next issue. The students did not fail to be impressed by the venerable personality of the lecturer, nor were they insensible to his sagacity and the literary grace of his speech. It was no small matter for a man of so mature years and so many engagements to undertake so great a labour, but he had some reward in the enthusiastic reception which he received.

Dr. Jacobi correctly classified his performance as a kaleidoscopic view of the past, and his pattern was sufficiently variegated to warrant the employment of the term. He described medical education as it was at Bonn and Göttingen over half a century ago, and traced its progress in other centres. He gave vivid pictures of his teachers, and, of such friends as Virchow, Billroth, Frerichs, Rokitsansky and Weber. He made excursions beyond the Rhine, and touched the borders of the Teutonic mysteries of materialism and the First Cause. Throughout the address he made a judicious use of humour and classical quotation, both of which were cordially received by the students.

The Principal in his short address very properly referred to the complete union of the Faculty with the University, which had been consummated during the present year, and he commended the Dean for his assiduous labour in that direction. The Principal also spoke sympathetically from his own experience to the men of the first and fourth years.

“What went ye forth for to see” would be a fair question to propound to the physicians who assisted at the necromancy of “Dr. Kaiser” on the 5th of September, at the Windsor Hotel. Students of pathology have been taught these many years that, following an injury, a series of events occurs to which the term “inflammation” is applied. Did these physicians think that by some foolish sorcery a new series could be devised, that a secret “fifth substance” had the power of destroying the reaction to injury with which all living tissue is endowed? Scientific medicine takes its stand upon certain inviolable principles and inevitable results. Charlatanism proclaims that there are no laws, or that, if there are, they may be set at defiance. The demonstration which “Dr. Kaiser” made upon himself was inconclusive. The burning was admitted; but he declined to show the results. He has since “exhibited” the injured arm, but it is not stated who saw it. If those present at the trial by fire had submitted themselves to the test, and informed us of the result of their researches, there would be something more satisfactory to go upon. We await with some interest the “literature” which is sure to arise out of this solemn foolery.

The last number of the *Bulletin Sanitaire*, which is the publication of the *Conseil d'Hygiène* of the Province of Quebec, contains some interesting statistics bearing upon tuberculosis for the year 1903. The deaths from this disease were 2,943 out of 30,876 deaths from all causes. In Ontario the total deaths were 27,864, and 2,694 were caused by tuberculosis. Of those who died in Quebec that year 220 were under one year; 239 between one and four years; 238 between five and fourteen years; 277 between fifteen and twenty-four; 974 between twenty-five and forty-four; 312 between forty-five and fifty-nine; 124 between sixty and sixty-nine, and 59 over 70 years. In Montreal the deaths from all causes were 7,432 in a population of 271,023, and from tuberculosis 837; of each 100 deaths in urban districts, 11.1 were caused by tuberculosis, and of each 100 deaths in rural districts 8.6 were caused by tuberculosis.

The melancholy case of Joseph Martin who destroyed the life of his infant child, whilst suffering from mental alienation, is a fresh warning to physicians against the evil of leaving a man in his condition unattended. The papers for his commitment to an asylum had been in his house for a fortnight. Through a laudable but misdirected sentiment they were not put in effect, and this fearful tragedy was the result. A physician has not performed his whole duty when he has signed the certificates. He should see to it that his patient is protected against his own disordered mind.

The Toronto General Hospital has made an effort to solve the question as to what relation should exist between hospitals and practitioners who are not on the staffs. The Board of Trustees has adopted the following rule: Surgeons who are not members of the staff, who desire to perform operations in the theatre, may do so on private and semi-private patients only, with the approval of a member of the surgical staff, provided that such member be present at the operation.

Reviews and Notices of Books.

ORTHOPÆDIC SURGERY. BRADFORD and LOVETT, 3rd Ed., 1905. Wm. Wood & Co.

The work of Bradford and Lovett is already too well known in its earlier editions to need any elaborate encomiums at this time. During the past decade, even during the past lustrum, orthopædic surgery has made very considerable advances along certain lines, notably, as the authors remark, those of congenital hip dislocation, scoliosis, coxa var-

and the non-tuberculous diseases of joints. These subjects have been largely rewritten and brought satisfactorily up to date.

Nevertheless, while the book represents, in a general way, the best level, perhaps, of American conservative orthopædics, there are certain points, involving essentials, which cannot but suggest themselves to the reviewer as being subject to criticism. For instance, the pathological side of the subject, while illustrated by numerous admirable cuts and photographs, lacks upon the whole a thorough and satisfactory discussion. This is true of most books on this subject printed in English as compared with the corresponding German publications. There is, as yet, no American or English book on orthopædics that can be placed as high as Hoffa's.

In the chapters upon tuberculosis of bone, the practical treatment is given with excellent detail, and Nichols's photographs of lesions are very good. But, is it quite right to advise opening a retropharyngeal abscess through the mouth, and give but a passing mention to external incision? The conservative treatment of cold abscesses, so strongly advocated by the late von Mikulicz, by aspiration and the injection of iodoform emulsion, a treatment which, at least, protects best from pyogenic infection, is given but scant attention, and that largely condemnatory. Open incision with drainage is recommended, with the somewhat naïve remark that the resulting sinus "will ultimately become infected with pyogenic organisms, thereby adding a pyogenic to a tuberculous infection."

The subject of arthritis deformans, in which so much good work has lately been done by the Boston school and by McCrae of Baltimore, is given satisfactory consideration.

The chapter upon scoliosis is admirable. So is that upon anterior poliomyelitis, especially in so far as the mechanical treatment of its deformities is concerned; but in the description of operative measures, a decided lack is felt. The important operation of arthrodesis is dismissed in a scant couple of paragraphs; while the wide field of tendon transplantation, an operation which under improved methods and with indications more accurately established, has recovered from the check of early failures, receives hardly sufficient attention.

Probably the two best chapters in the book are those which concern congenital dislocation of the hip and the various forms of talipes; these are indeed worthy of praise. The book closes with a very useful chapter containing full descriptions of the various forms of apparatus used in the mechanical treatment of deformities; a chapter which will prove of the greatest value to the great mass of practitioners who are

obliged to treat orthopædic cases far from large hospitals or specialised assistance.

As a whole, the work can hardly be said to represent adequately the vast experience of the authors, an experience that would enable them to write a much more complete treatise than the present one; on the other hand, for the undergraduate, and for the large middle class of the surgeon practitioner, it can be recommended as perhaps the best book extant upon the subject in English. E. A.

PHYSICAL DIAGNOSIS. By RICHARD C. CABOT, M.D., Instructor in Medicine in Harvard University. Third edition, revised and enlarged, with five plates and two hundred and forty figures in the text, 577 pages. William Wood & Company, publishers, New York.

In this book, which "endeavours to present an account of the diagnostic methods and processes needed by competent practitioners of the present date" only those methods are described which the author has come to know by prolonged use. What he has found valuable Dr. Cabot recommends to others, and in his endeavour to break down the false distinction between clinical diagnosis and laboratory diagnosis, he describes in a single section, all the methods of getting at an organ.

The field of physical diagnosis is well covered with the exception that uses of special instruments of examination, such as the cystoscope, the ophthalmoscope and the laryngoscope—among others, are scarcely mentioned. It would seem that as such instruments are so essential to a good physical diagnosis, an extra chapter or two devoted to this subject would add to the value of the book. To provide for these and at the same time not to increase the size of the work several unnecessary illustrations, as well as not a few of those which are quite useless might be eliminated.

We note in Dr. Cabot's volume among many good things which cannot fail to be most helpful to the student and practitioner, several notes explaining signs which, to say nothing more, lack clearness. Two examples may be taken:—"The moving shadow described in Litten's sign is due to the "falling off" of the diaphragm and the descent of the lung during inspiration." "Emaciation in those afflicted with aneurysm is due to loss of sleep."

A few of the terms used may be pointed out as lacking in elegance,— "the dead, *woodeny* feeling," "*crumples* up the toes toward the sole of the foot," "If the great toe *cocks* up toward the shin."

Yet another classification is found for "râles,"—but its simplicity commends it. The methods of taking the blood pressure, so much before

the profession, are described and the subject is dismissed with a few words indicating in a general way the progress made in such investigations and the possibilities. The book closes with five appendices in which are discussed Diseases of the Mediastinum, Acute Endocarditis, Physical Examination of the Chest in Infants, Radioscopy of the Chest, and the Sphygmograph.

The acceptability and helpfulness of this work can be scarcely more emphatically expressed than by the statement of the fact that at the end of six years it has reached its third enlarged and revised edition.

HUMAN PHYSIOLOGY. Prepared with Special Reference to Students of Medicine. By JOSEPH H. RAYMOND, A.M., M.D., Professor of Physiology and Hygiene, Long Island College Hospital, New York City. Third edition, thoroughly revised. Octavo volume of 687 pages, containing 444 illustrations, some in colours, and four full-page lithographic plates. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, \$3.50 net. Canadian Agents: J. A. Carveth & Co., Ltd., Toronto.

In recent works on physiology we notice a growing tendency to disregard the boundaries with which custom has marked off this science and to trespass upon the domain of pathology and clinical medicine. In the volume before us, for instance, we find ten pages devoted to the effect of alcohol on the human body, eight pages to operative removal of the human stomach and its results, twelve pages to photography of the larynx, and two to ovarian and abdominal pregnancy.

These sections are all very excellent and interesting, and if this lavish allotment of space could be made without curtailing other parts of the book, we should have no objections to make. A book of six hundred and sixty-four pages, however, can only contain a limited number of words, and when we come to the important subjects of muscle and the nervous system we find the greatest parsimony prevailing. Some subjects that we expect to see discussed at considerable length, like the laws of contraction of muscle in response to the constant current, are not mentioned, much less explained. Similar gaps are numerous in the section on the nervous system.

Among the best features of the book are the illustrations which are numerous and well chosen. Another striking feature is the great number of acknowledged quotations from other writers. Some parts of the book in fact are largely made up of quotations and condensations from Schafer's large physiology. We must say that the selection and condensation is very well done, so that the result is usually excellent.

This book on the whole is handsome, readable and well illustrated. It

discusses in a very interesting way numerous subjects which have recently undergone important developments. We find here excellent accounts of digestion, nutrition, secretion and circulation, but we feel that a student should know a good deal more about muscle and the central nervous system than this book contains. *IV. S. M.*

THERAPEUTICS; ITS PRINCIPLES AND PRACTICE. By HORATIO WOOD, M.D., LL.D., Professor of Materia Medica and Therapeutics in the University of Pennsylvania. 12th edition, thoroughly revised and adapted to the eighth edition of the U. S. Pharmacopeia, by Horatio C. Wood and Horatio C. Wood, Jr., M.D. J. B. Lippincott Company, 1905.

No work on Pharmacology in the English language was received with more interest by the medical profession than was the first edition of this volume on Therapeutics. Appearing at a time when experimental investigation into the exact action of drugs was beginning to illuminate the crude and imperfect knowledge obtained by clinical experience, Prof. Wood's treatise was the first to systematically arrange the result of these experiments and deduce conclusions applicable to therapeutics. Since that first edition pharmacology has made great strides, but a careful examination of the present volume shows that the editors have kept pace with its advances and that this edition may be accepted by the profession of to-day as in every way a modern book. Besides the changes necessary to make the work conform to the new pharmacopeia, many chapters have been re-written; seventy drugs have been added to the list of those previously discussed, and the position of some of the older drugs in the scheme of classification has been altered owing to more exact knowledge of their mode of action. We regret that alterations of this character were not more numerous. A convenient and serviceable classification of drugs is certainly of the greatest value to the student who is endeavouring to obtain a masterful grasp of our very heterogeneous materia medica. The classification elaborated by Prof. Wood in the first edition, a classification dependent upon therapeutic action, has been very generally accepted by teachers in America; and, although one or two more recent writers have endeavoured to supplant the therapeutic by a pharmacologic classification, the majority of teachers, as well as students, still prefer, we believe, the therapeutic basis. To be of value, however, the classification must be made upon the most prominent and important action of the drug. The placing of the nitrites in the group of depresso-motors is in our opinion unfortunate, for it throws into the background the all-important action of this group. Few pharmacologists to-day consider alcohol to be a cardiac stimulant,

and modern therapeutists may feel some surprise that the group of antiperiodics is still retained. The application of the term "delirifacients" to the belladonna group is also, in our opinion, inappropriate; for, although members of this group may in *toxic* doses induce delirium, such action has no therapeutic indication.

Passing on, however, to the description of the pharmacologic and therapeutic action of the individual drugs, we have for the most part, little but praise. We have long admired Prof. Wood's clear and concise description of the action of drugs as evidenced by the result of numerous experiments, and, although we may sometimes differ from him in his conclusions, we always consult with pleasure and profit his eminently practical and trust-worthy picture of drug action. The introductory chapters on remedial measures, while valuable, are, in our opinion, too brief, and do not suitably present to the student the important subjects of hydrotherapy, climatotherapy, dietotherapy and massage. We regret that as yet no text-book on therapeutics gives these subjects the relative importance which the physician of to-day assigns to them. These criticisms, however, can affect very little a work which has received the approval of the profession in every country and has now reached its twelfth edition. In its present form the work will, we are convinced, prove of much value to students generally and to the physician who desires to have a clear knowledge of the exact action of the drugs he is employing.

A. D. B.

PRACTICE OF GYNÆCOLOGY. By WILLIAM EASTERLY ASHTON, M.D., LL.D., Professor of Gynæcology in the Medico-Chirurgical College, and Gynæcologist to the Medico-Chirurgical Hospital, Philadelphia. First edition. W. B. Saunders & Company, Philadelphia and London, 1905. Canadian Agents: J. A. Carveth & Co., Ltd., Toronto.

Professor Ashton has presented his world with a book of one thousand pages wherein, as he himself pleads, he has "considered fully both the medical and surgical aspects of gynæcology." Illustrating this text are ten hundred and forty-six new line drawings; and the whole is gracefully dedicated to Alice Ashton, his wife.

In the preface—as usual something of an "Apologia"—the author asserts that he has taken nothing for granted, and that his book furnishes full and explicit directions of "what should be done in every case." We are free to admit that subsequently he makes good this contention for all details of treatment, operative or therapeutic, are most minutely described; while the drawings everywhere run riot, and these drawings show everything, beginning with aprons and rubber gloves.

And so far this work is good—good as a practical guide to the trained man.

But, unfortunately, the book is made to include the scientific and clinical aspects of the subject, following the order of the systematic text-book. And here the work ceases to be good, is but shortly and imperfectly done. The result is a large ill-balanced treatise which tacitly preaches that it is not so important to know "what to do," as "how to do it." The good operative "manual" becomes an indifferent "system."

Our great quarrel with Professor Ashton's book is this: it proposes, avowedly, to teach the untrained practitioner to perform surgical operations, teaches him at great length, at the cost of many pages, how to operate. Operative surgery is an art and, as any other art, cannot be learned in the study and from books. This must always be so, and, in consequence, such attempts as this of Professor Ashton's can result only in the creation of text-books that are ill-advised, and of surgeons that are amateur and ill-equipped.

DIETETICS FOR NURSES. By JULIUS FRIEDENWALD, M.D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore; and JOHN RUHRAH, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. 12mo volume of 363 pages. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, \$1.50 net. J. A. Carveth & Co., Toronto.

This volume fulfils all the conditions which are necessary in a book of dietetics. It is entirely adequate for the purpose for which it is intended. It is newly written, and is not an abridgement of the larger work by the same authors.

GREEN'S PATHOLOGY. Tenth edition. A Text-book of Pathology and Pathological Anatomy. By T. HENRY GREEN, M.D., F.R.C.P., Consulting Physician to Charing Cross Hospital, London. New (10th) edition. Thoroughly revised by W. CECIL BOSANQUET, M.D., F.R.C.P., Assistant Physician to Charing Cross Hospital. Octavo, 606 pages, 348 engravings and a coloured plate. Cloth, \$2.75, net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1905.

There are men now old who first learned their pathology from "Green," and have followed the progress of that fascinating branch of science in the successive editions as they have appeared. The present edition is the tenth, and one regards it with a sentiment of affection apart from its excellence as a text-book. The names of the former editors, H. Montague Murray and Walton Martin, have disappeared

from the title-page, and the name W. Cecil Bosanquet stands in their stead. Ten editions testify to the correctness of the plan upon which the work was constructed, and successive editors have not found it necessary to depart materially from the lines which were originally laid down. Simplicity, clearness and fullness have characterised the work from the beginning, and these qualities are retained in the present edition.

THE TREATMENT OF FRACTURE; with Notes upon a few Common Dislocations. By CHARLES LOCKE SCUDDER, M.D. Surgeon to the Massachusetts General Hospital. Fifth edition, thoroughly revised. Octavo, of 563 pages, with 739 illustrations. Philadelphia and London: W. B. Saunders & Co., 1905. Canadian Agents: J. A. Carveth & Co., Limited, 434 Yonge Street, Toronto.

That five editions have been called for in as many years is evidence that the book supplies a need, and is appreciated. The present edition is again somewhat enlarged, and contains about fifty new illustrations, many of them of X-ray plates illustrating the actual line of fracture.

We find here, again, evidence of advance in the treatment of fracture of the neck of the femur. The results so far have often been unsatisfactory. More perfect coaptation of the fragments and more complete immobilization, with more liberal appreciation of dietetic and hygienic resources are followed by a smaller mortality and more useful limbs. Scudder may be said to represent the views and teachings of the Boston school, and his book on fractures is up to date and teaches sound principles and approved methods.

Medical News.

CANADIAN MEDICAL ASSOCIATION.

The following is the official list of those present at the thirty-eighth meeting of the Canadian Medical Association in Halifax, August 23rd to 25th, 1905:

H. Beaumont Small, Ottawa; George Elliott, Toronto; F. W. Goodwin, Halifax; A. Leitch, St. Thomas; A. Stewart, Palmerston; M. D. Morrison, Old Bridgeport, C.B.; J. Fred. Lessel, Halifax; Geo. M. Campbell, Halifax; J. St. Clair McKay, Earltown, N.S.; W. H. Hattie, Halifax; M. A. B. Smith, Dartmouth; W. P. Chisholm, Brockton, Mass.; Jos. J. Doyle, Halifax; A. I. Marder, Halifax; F. A. L. Lockhart, Montreal; A. Mather Hare, Halifax; B. S. Thorne, Havelock, N.B.; C. Dickie Murray, Halifax; D. A. Campbell, Halifax; M. E. Armstrong, Bridgetown, N.S.; C. A. Webster, Yarmouth, N.S.; John J. McKenzie, Tor-

onto; J. Ross Miller, Amherst, N.B.; R. L. Langstaff, Richmond Hill, Ont.; Duncan Campbell, W. B., Pictou Co., N.S.; R. A. Reeve, Toronto; F. R. Eccles, London; A. B. Atherton, Fredericton; F. P. Drake, London; H. L. Reddy, Montreal; W. Bruce Almon, Halifax; Charles Verge, Quebec City; J. D. Page, Quebec City; Thomas W. Walsh, Halifax; William Rockwell, River Herbert, N.S.; W. S. England, Winnipeg; W. Tobin, Halifax; Andrew Love, Sydney Mines, C.B.; Murray MacLaren, St. John, N.B.; F. H. Wetmore, Hampton, N.B.; H. S. Birkett, Montreal; Clarence L. Starr, Montreal; H. Meek, London; F. L. Burdon, London; Howard M. Church, Montreal; N. E. Mackay, Halifax; W. H. Eagar, Halifax; T. C. Lockwood, Lockport, N.S.; Ridley McKenzie, Montreal; F. G. Finley, Montreal; Chas. C. Gurd, Montreal; J. Price, Campbellton, N.B.; J. H. MacKinnon, Brooklyn, N.Y.; F. B. Day, Westville, N.S.; H. A. March, Bridgewater, N.S.; E. N. Hogan, Halifax; E. O. Hallett, Waymouth, N.S.; Francis A. R. Gow, Halifax; R. W. Powell, Ottawa; J. D. Courtenay, Ottawa; J. V. Anglin, St. John; E. N. Payzant, Wolfville, N.S.; R. E. Mathers, Halifax; L. W. Johnston, Sydney Mines, C.B.; J. J. Roy, Sydney, C.B.; R. F. O'Brien, Elmsdale, N.S.; R. D. Rudolf, Toronto; A. McPhedran, Toronto; G. J. McNally, Fredericton, N.B.; R. A. H. Mackeen, Glace Bay, C.B.; W. H. Irvine, Fredericton, N.B.; A. G. Ferguson, Dalhousie, N.B.; E. H. Kirkpatrick, Halifax; Robert King, Halifax; William D. Forrest, Halifax; F. Montizambert, Ottawa; W. J. Bradley, Ottawa; C. P. Bissett, St. Peter's, C.B.; John McMillan, Pictou, N.S.; D. J. Macdonald, Sydney, N.S.; W. W. Alexander, Lachute, Que.; B. F. Boyce, Kclowna, B.C.; J. J. Cameron, Antigonish, N.S.; G. E. Armstrong, Montreal; John E. Somers, Cambridge, Mass.; Frank R. England, Montreal; F. V. Woodbury, Halifax; A. F. Buckley, Halifax; Edward D. Farrell, Halifax; M. A. Curry, Halifax; Alex. Taylor, Goderich; D. H. Taylor, Londonderry, N.S.; R. B. Nevitt, Toronto; A. McD. Morton, Bedford, N.S.; H. M. Jacques, Canning, N.S.; Thos. Trenaman, Halifax; Wm. Warwick, Westfield, N.B.; A. T. Shillington, Ottawa; L. M. Murray, Halifax, N.S.; J. L. Chabot, Ottawa; Osborne Morris, Vernon, B.C.; A. D. Blackader, Montreal; F. LeM. Grasett, Toronto; Freeman O'Neill, Louisburg, C.B.; David Alex. Shirres, Montreal; James Ross, Halifax; D. G. J. Campbell, Halifax; C. H. Dickey, Halifax; W. G. Morrow, Montreal; A. J. Cowie, Halifax; J. W. McLean, North Sydney, C.B.; F. S. Creelman, Maitland, N.S.; J. W. T. Patton, Truro, N.S.; C. Randall Gates, North Brookfield, N.S.; J. Clyde Macdonald, Westville, N.S.; F. N. G. Starr, Toronto; F. J. A. Cochran, Halifax; M. Chisholm, Halifax; E. E. Bissett, Port Morrice, C.B.; E. Douglas, Halifax; Francis M. Caird, Edinburgh, Scotland; W. N. Wickwire, Halifax; H. K.

McDonald, Lunenburg, N.S.; A. M. Hebb, Chester, N.S.; F. S. Yorston, Truro, N.S.; Howard A. Kelly, Baltimore; H. E. Kendall, Sydney, N.S.; H. Geo. Addy, St. John; G. L. Foster, Halifax; Herbert A. Bruce, Toronto; Charles S. Morton, Port Greville, N.S.; Edward Archibald, Montreal; Joseph Hayes, Nelson, N.B.; J. S. Bentley, Truro, N.S.; Mary L. Randall, Sydney, C.B.; J. H. Bell, Halifax; W. Grant Stewart, Montreal; A. P. Reid, Middleton, N.S.; D. J. Gibb Wishart, Toronto; W. W. Goodwin, Boston, Mass.; Alex. Murray, Deer Island, N.B.; J. A. Turnbull, Clark's Harbor, N.S.; H. V. Pearman, Halifax; S. R. Jenkins, Charlottetown; H. D. Johnson, Charlottetown; W. F. Hamilton, Montreal; W. T. M. MacKinnon, Amherst, N.S.; D. MacKintosh, Pugwash, N.S.; R. D. Bentley, Wallace, N.S.; A. S. Simpson, New Glasgow, P.E.I.; P. M. Balcom, Aylesford, N.S.; J. A. Sponagle, Middleton, N.S.; L. R. Morse, Lawrencetown, N.S.; Geo. H. Cox, New Glasgow, N.S.; S. C. Primrose, Annapolis Co., N.S.; G. F. Dewar, Southport, N.S.; A. J. Murchison, Clyde River, P.E.I.; C. J. Miller, New Glasgow, N.S.; W. B. Moore, Kentville, N.S.; H. R. Munro, Stellarton, N.S.; C. J. Margeson, Hantsport, N.S.; J. B. Black, Windsor, N.S.; P. McLaren, Montague, P.E.I.; Robinson Cox, Upper Stewiacke, N.S.; J. A. Sutherland, Springhill, N.S.; W. G. Putnam, Yarmouth, N.S.; H. A. Lafleur, Montreal; James Bell, Montreal; J. Appelbe, Parry Sound, Ont.; F. F. Eaton, Truro, N.S.; J. W. Stirling, Montreal; S. A. Fulton, Truro, N.S.; H. E. McEwen, O'Leary, P.E.I.; Fred. J. White, Moncton, N.B.; Joseph Hayes, Parrsboro, N.S.; A. F. Norton, Oxford, N.S.; C. A. McQueen, Amherst, N.S.; W. S. Woodworth, Kentville, N.S.; W. M. Mather, Tweed, Ont.; L. C. McLeod, Newfoundland; Louis H. Morse, Digby, N.S.; Thos. W. R. Flinn, Halifax; A. C. Jost, Guysboro, N.S.; C. Kennedy, New Glasgow, N.S.; J. H. Mack, Halifax; H. V. Kent, Truro, N.S.; J. O. Calkin, Sackville, N.B.; Thomas Walker, St. John; J. M. Elder, Montreal; F. S. D. Ford, New Germany, N.S.; C. B. Trites, Liverpool, N.S.; A. A. Schaffner, Halifax; A. E. Doull, Halifax; C. F. Freeman, Folly Village, N.S.; H. P. Clay, Pugwash, N.S.; S. E. Shaw, Berwick, N.S.; St. C. J. Gallant, Kirkwell, P.E.I.; A. C. Hawkins, Halifax; M. C. Smith, Lynn, Mass.; Walter E. Boardman, Boston, Mass.; G. B. Kennedy, Tangier, N.S.; W. J. Kennedy, Musquodoboit Harbor, N.S.; G. W. T. Farish, Yarmouth, N.S.; C. S. Marshall, Bridgewater, N.S.; E. T. Gaudet, St. Joseph, N.B.; J. Howard Slayter, Halifax; F. C. Lawlor, Dartmouth, N.S.; H. D. Weaver, Halifax; L. M. Silver, Halifax; G. C. Jones, Halifax; J. R. Corston, Halifax; J. W. Daniel, St. John; F. N. Stephens, Mahone, N.S.; E. W. Dunlop, Port Dufferin, N.S.; N. F. Cunningham, Dartmouth, N.S.; Albert A. Macdonald, Toronto; J. W. Reid,

Windsor, N.S.; L. M. Curran, Fairville, N.B.; A. Laphorn Smith, Montreal; F. Fisher, Bay of Islands, Newfoundland.

The following is the report of the special committee on Public Health, which was submitted to the meeting by Dr. R. W. Powell, convener:—

As convener of your sub-committee *in re* the creation of a Department of Public Health as a Dominion measure, I have the honour to report that practically no advance has been made since we first presented your views to the Federal Government on this important question three years ago. Strong resolutions have been passed by your Association containing the views of the profession on this matter, year after year, and they have been duly forwarded to the proper authorities at Ottawa, to say nothing of the personal representations of your sub-committee, conveyed to the Government by way of deputation and personal interview. On the last occasion in which I waited upon the Hon. the Minister of Agriculture, he pointed out to me that he was familiar with the views of our Association as contained in the several resolutions referred to above, and that it appeared to him to be unnecessary to call the committee to Ottawa to reiterate what we had so clearly laid before him. He assured me that the whole question had his entire sympathy and that he trusted to see such a scheme as had been outlined to him brought into operation. And he further said that it was his intention to bring the matter again to the attention of the Prime Minister, he hoped at a date sufficiently early to enable him to give something rather definite for our meeting at Halifax. Your committee feel that they have done what they could to induce the Government at Ottawa to create a Department of Public Health, under one of the existing ministers, in order to place this important branch of the public service on the same footing as it stands in nearly all progressive countries. We regret, however, to be obliged to report that so far our efforts have been unavailing, and as we believe that a more powerful and influential committee is needed from this Association to more seriously impress the Government with the great importance of this question, we respectfully ask to be discharged.

McGILL MEDICAL FACULTY.

The seventy-fourth session of the Medical Faculty of McGill University began on the 19th September with an introductory lecture by Dr. A. Jacobi, of New York. Dr. T. G. Roddick, the Dean, presided. Upon his right was the Principal, and upon his left Dr. E. P. Lachapelle. Other professors present were Drs. Girdwood, Stewart, Adami, Blackader, Ruttan and Birkett. Dr. Roddick introduced the lecturer, and gave some account of his work in the fields of medicine. At the same time

He addressed words of welcome to the students, especially to those who came for the first time. After the lecture a vote of thanks to Dr. Jacobi was proposed by the Principal and seconded by Dr. Blackader in suitable terms. In presenting it Dr. Roddick acknowledged the receipt of books and specimens from the Faculty of Bishop's College, and formally declared the session open.

THE ASYLUMS OF ONTARIO.

The Medical Superintendents of the Asylums of the Province of Ontario met in Toronto on the 20th of September. They were assembled by Mr. Hanna, the Provincial Secretary, who said in his address that, when he entered upon the duties of his office he had found himself in charge of a number of matters with which he was not thoroughly acquainted. Being in charge of the asylums of the province, he had called the meeting to obtain some information, and to bring the medical superintendents of the province into closer touch with each other. He hoped there would be frequent conferences of this kind, and he expected to extend the idea into other departments of the work under his charge. Mr. Hanna then invited the conferences to present their views freely.

There were present at the conference the following medical superintendents: Dr. Charles K. Clarke, Toronto; Dr. Ryan, Kingston; Dr. Beemer and Dr. Forster, Mimico; Dr. Beaton, Orillia; Dr. Russell, Hamilton; Dr. MacCallum, London; Dr. Hickey, Cobourg; Dr. Moore and Dr. Mitchell, Brockville. There were also present: Dr. Ross, Toronto; Dr. Gilmour, warden of the Central prison; Mrs. O'Sullivan, Mercer Reformatory; Inspectors Armstrong, Rogers and Bruce Smith; and Mr. J. W. Flavelle, chairman of the Toronto General Hospital Board; Dr. W. Oldright and Dr. Campbell Meyers. Dr. MacCallum was appointed chairman, and Dr. Beemer secretary.

Dr. Campbell Meyers read an important paper upon the Treatment of Insanity in its very earliest stage. Three means, he said, had been suggested: The first was the conversion of asylums into hospitals, admitting neurasthenics without certificates; second, establishing clinical wards in asylums for the study of insanity; or, third, the establishing of one or more pavilions in connexion with general hospitals where such patients could be received. The experience of other places showed that it was to the third plan that they must turn for a practical solution of the difficulty. "If," he said, "we are to maintain the same advance in this branch of medicine in Ontario as elsewhere, we must establish these wards for neurasthenics in our general hospitals, and we will pre-

vent insanity in at least fifty per cent. of cases, relieve our asylums of that many patients, and provide better clinical instruction for medical students. The trustees of the Toronto General Hospital offer the residence of the late superintendent for this class of cases, provided that the local Government will give the amount required to alter and equip the building."

Dr. MacCallum, of London, discussed the advisability of appointing a provincial pathologist to trace the pathology of the diseases of idiots and degenerates, and to give the benefit of his advice to the superintendents. There are over 6,000 unfortunates now in the care of the province, he said, and the growing number demanded close study of the causes of their condition. Dr. MacCallum asserted that Canada was at present a dumping ground for United States degenerates.

MONTREAL GENERAL HOSPITAL.

The adjourned quarterly meeting of the Montreal General Hospital was held on the 19th September. Mr. James Crathern presided, and twenty-one governors were present. Dr. Craik gave some reminiscences of the days fifty-one years ago, when he and Dr. Ault were house-physicians. The President announced that the expenses of the quarter had been \$23,858, and the income \$18,975, leaving a deficiency of \$4,883, and showing an increase of expenditure of \$1,807 over the corresponding quarter of last year.

The report of the acting medical superintendent, Dr. F. S. Patch, stated that during the quarter ended June 30th, 803 patients were treated to a conclusion. There were 55 deaths, of which 28 occurred within three days of admission, making the mortality rate for ordinary hospital cases 3.34 per cent. The aggregate number of hospital days was 20,674, an average duration per patient of 25.6 days. The average number of patients in the hospital per day was 199.

The medical staff for the year, nominated by the medical board, entered upon their duties on September 1st, and are: Drs. J. C. Fyshe, J. L. Robinson, L. L. Reford, reappointed; C. W. Anderson, resident pathologist; E. F. F. Richards, anæsthetist; A. R. Robertson, F. J. Tees, H. C. Mersereau, T. R. B. Nelles, G. M. Hume, J. H. Macdermot; R. F. Moffatt and J. H. Mason, *locum tenens*.

Additional appointments were made to the out-door staff as follows:—

Out-patient physicians—Drs. A. W. Gordon, B. W. D. Gillies, A. C. P. Howard; C. A. Peters, appointed in place of Dr. F. W. Campbell, deceased.

Out-patient surgeons—Drs. E. M. Von Eberts, A. T. Bazin, A. R. Pennoyer.

DENTAL ASSOCIATION.

The annual meeting of the Dental Association of the Province of Quebec was held on 20th September, at Laval University. There were 75 delegates present. Dr. Hyndman, of Sherbrooke, presided over the meeting, which re-elected the three retiring examiners from the regularly constituted board of nine—Dr. C. F. Morison, Dr. Dubeau, and Dr. J. G. A. Gendreau. They are elected for three years, three members of the board retiring each year.

The officers of the association for this year are:—President—Dr. Stevenson; Vice-President—Dr. Lemieux (Quebec); Secretary—Dr. Dubeau; Treasurer—Dr. J. G. Gardner; Registrar—Dr. C. F. Morison.

Dr. R. A. Stevenson read a paper upon "Dominion Registration for Dentists."

 ROYAL VICTORIA HOSPITAL.

Monthly report for August: Patients admitted, 275; discharged, 250; died, 19. Medical, 95; surgical, 114; ophthalmological, 22; gynaecological, 40; laryngological, 4. Out-door department: Medical, 857; surgical, 382; eye and ear, 387; diseases of women, 163; nose and throat, 302; total, 2,092. Ambulance calls, 80.

Dr. J. A. L. McAlpine, who for the past year has acted as Dominion Immigration Inspector and Medical Health Officer for the port of Vancouver, under appointment of the Department of the Interior, has resigned. He is succeeded in office by Dr. A. S. Monro, who has for the past two months acted as official physician for the treatment of diseased immigrants who were placed under detention by Dr. McAlpine. Dr. R. E. McKechnie has been appointed to the position vacated by Dr. Monro.

The Saskatchewan Provincial Medical Association was organized on the 5th September. At the first meeting, which was an organizing one, the work was that of drafting by-laws and electing officers. The following officers were elected: President, Dr. Henderson, Qu'Appelle; Vice-President, Dr. Turnbull, Moose Jaw; Secretary, Dr. Charlton, Regina; Council—Drs. Argue, of Grenfell; Egleston, of Weyburn; Stewart, of Rosthern; and Graham, of Regina.

Dr. Simon Fitch, of Halifax, died on the 14th September, aged eighty-six. He was born in Nova Scotia, educated at Acadia College and Edinburgh, and practiced medicine in various places. Since 1876 he

has lived in Halifax, and became one of the oldest physicians in Nova Scotia.

The Minister of Militia and Defence detailed Lieut.-Col. J. F. Fotheringham, A.M.S., and Major E. B. Echlin, 2nd Field Battery, to represent the Canadian Medical Services at the Convention of the United States Military Surgeons, which was held at Detroit, on the 25th September.

An association of physicians has been formed in the Gulf district. The first meeting was held at Rimouski, and the following officers were elected: President, Hon. Senator J. B. R. Fiset; Vice-President, Dr. J. A. Ross, M.P.; Second Vice-President, Dr. J. A. Pinault, Metapedia; Secretary-Treasurer, Dr. Jos. Gauvreau.

The annual University Lecture will be delivered on the 6th October, by Dr. Walter Scott, the newly elected Professor of Classics. The subject of the address will be "The place of Classics in the Modern University."

Dr. T. W. Poole, of Lindsay, died on August 29th, in the 74th year of his age.

Dr. George I. MacKenzie, of Pictou, died on August 22nd. He was well known in Eastern Nova Scotia.

Dr. Henry W. Robertson, Victoria, Prince Edward Island, died on August 12th, in the 62nd year of his age.

Dr. Colin I. Dewar, of Ottawa, died on the 7th September, in the forty-first year of his age. Death was sudden, and was caused by uræmia.

Dr. W. J. Andrew died in Winnipeg of scarlet fever on August 19th. He was a graduate of Manitoba University and was only 26 years of age.

Dr. Edward Tegart, of Brantford, died on the 9th September, in the seventy-first year of his age. His wife had predeceased him by only a few hours.

Dr. D. H. Harrison, a resident of Vancouver since 1900, and in the late eighties a prominent figure in Manitoba political life, is dead, in his sixty-third year. Dr. Harrison was born in London, Ont., June 1st, 1843, and was educated at Toronto University and McGill, graduating as a doctor of medicine in 1864.

Retrospect of Current Literature,

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

ERNEST W. HEY GROVES, M.D., B.Sc., B.S. (Lond.). "On Diffuse Carcinoma of the Stomach." *The Practitioner*, August, 1905.

This condition is a comparatively rare one, and in its symptoms and course differs very markedly from the common type of gastric cancer, as is shown by the description of two such cases. The first case was a man aged 51, who had been ailing for about twelve months. His symptoms began very insidiously with loss of appetite and flesh, and enlargement of the abdomen. He had had pain and some vomiting, but never brought up blood. When seen he presented the appearance seen in a child with advanced tubercular peritonitis. After aspirating six quarts of straw coloured fluid, a hard, irregular mass, about the size of a fist, was palpated in the epigastrium. Exploratory laparotomy showed the case to be inoperable, as not only the entire stomach was involved, but the growth had also invaded the portal fissure. At autopsy, about a month later, these facts were corroborated, and in addition, the whole peritoneum found to be much thickened; there was no new growth in the liver, and on cutting open the stomach its cavity was reduced to a mere slit between the indurated and thickened walls. The mucous membrane was intact, with neither fungating outgrowth nor eroding ulcer, while the muscular coat was much hypertrophied. The hypertrophy of the muscular coat is seen in all other parts of the alimentary canal when affected by cancer, and, although it may sometimes be due to functional hypertrophy above a stricture, it is certainly not always so, because it is often seen (as in the present case) to be best marked in the very midst of the new growth itself.

The second case was a woman, aged 27, who for four months had had frequent attacks of vomiting and abdominal pain. She had not brought up any blood. There was distinctly felt a small area of resistance under the upper part of the right rectus, but not defined as a definite mass. She improved markedly with rest in bed, and took a full diet of meat and vegetables without pain. In view of the almost entire absence of symptoms, and the patient's age, a provisional diagnosis of contraction of the rectus over some tender adhesions, *e.g.*, the gall-bladder, was made. Exploratory incision was declined, and she left the hospital. Three weeks later she was admitted with the clinical symptoms of a large ovarian cyst with twisted pedicle. Guided by the previous knowledge of the case, the stomach tube was passed, and over 52 ounces of a black fluid gushed out as if under great pressure. A definite mass was this

time made out lying under the right semi-lunar line on a level with the umbilicus. In view of her very weak condition operation was postponed, but improvement never came. An interesting clinical point to be noted was the fact that the hard mass which seemed evident at the pylorus, became less and less definite until death ensued, when it was impalpable. At *post mortem* the stomach was greatly distended, the greater curvature reaching nearly to the pubes. The pylorus presented no abnormality from the outside and was flaccid. On opening the organ the mucous membrane was eroded in many places, but there was no ulcer or growth affecting it. Two fingers could be passed through the pylorus. From the above facts this case appears to be one of acute dilatation of the stomach, while the thickening of the muscular coat at the pylorus and its extension on to the stomach exactly resembles a case of hypertrophic stenosis of the pylorus in the adult, but microscopic examination showed it to be malignant. The writer reasons that the pyloric condition would have presented the same flaccid state under a general anæsthesia as found at the autopsy, that no tumour would have been felt, and hence not removed. To guard against such conditions the only safe way would be to remove a piece of the pylorus for microscopic examination at the same time that a gastro-enterostomy is done.

JOSEPH C. BLOODGOOD, M.D. "Cysts of the Thyroid Gland. A Clinical and Pathological Study." *Surgery, Gynecology and Obstetrics*, August, 1905.

The paper is based upon the experience of the surgical clinic and its pathological laboratory in lesions of the thyroid gland, consisting of 122 cases in all, and classified as follows: Simple goitre, 38 cases; exophthalmic goitre, 35 cases; cysts, 24 cases; fetal adenoma, 8 cases; mixed adenoma, 4 cases; adenoma with metastases, 1 case; carcinoma, 7 cases; sarcoma, 1 case; acute thyroiditis, 2 cases; chronic thyroiditis (senile), 1 case; fistula of the thyroglossus duct, 2 cases. A short summary of the various pathologic changes in the organs and their clinical pictures is given. Thyroid lesions consist of hypertrophies, tumours, and inflammations. Simple and exophthalmic goitre represent the first; fetal adenoma, mixed adenoma, cysts, carcinoma and sarcoma are the most common tumours; while inflammation is a rather infrequent lesion. Lesions of the thyroid show themselves clinically as symmetrical enlargements, or as asymmetrical. In the former class we have the simple goitre and the exophthalmic. Inflammations, both acute and chronic may be associated with fairly symmetrical enlargement, but generally there are other local conditions indicating the in-

flammatory nature of the lesion. The asymmetrical lesions exhibit themselves as single or multiple enlargements, and in this class we have the adenomata, cysts, and malignant varieties. In view of the universally bad results of operations on malignant cases, and the difficulty of making a definite diagnosis early enough to ensure complete removal, every asymmetrical enlargement of the thyroid in individuals of 30 years of age should be removed.

Regarding cysts the age of onset was found to be between 10 and 65 but the greater number appeared between 10 and 21. No definite relation between the size of the cyst and its duration was found to exist, while tumours of long duration have varied in size at different times. With reference to the cause no definite relation was found to obtain between the cystic development and puberty, pregnancy, or the menopause. One case was observed at the onset of puberty, but disappeared within a year. One case was observed at a pregnancy, and in one case a very great enlargement of a previously small tumour was coincident with the menopause. A study of the cases shows that cysts apparently arise in comparatively normal glands. In simple goitre no large cysts were found, and in the other lesions of the gland no macroscopic cysts have been seen. The most interesting clinical fact is the relation between the cyst and certain general symptoms, somewhat like those of exophthalmic goitre, but there is no doubt that one may have a cyst of the thyroid without any symptoms save the tumour.

With reference to the position of the cyst it was found to be present in the median line in five cases, three above, one below, and one in the isthmus itself. In eleven cases it was in the right lobe, in four of these the cyst was outside the gland. In six cases it was on the left side. In two cases cysts were in both lobes. The writer is unable to come to any definite conclusion regarding the etiology of these cysts, and is not at all impressed with the usual conclusion that hæmorrhage is the preliminary factor. In many of the cases histological evidence of hæmorrhage was absent, while hæmorrhage in simple goitre without cyst formation is much more common. He believes it is more easy to explain the origin of the thyroid cyst on the basis of a solid adenoma. This encapsulated tumour may be present within or without the gland. In its growth the central dilated colloid alveoli coalesce and form a cavity due to the degeneration of the colloid material and lining epithelium cells. From the standpoint of practical surgery, our present knowledge of thyroid cysts is sufficient to indicate rational treatment. They should be excised. The operation is not a difficult or dangerous one, and the results have been a permanent cure.

DR. FELIX PERUTZ (München). "Subphrenic Abscess—A Critical Review of the Literature from 1894 to 1904." *Centralblatt f. d. Grenzgeb. d. Med. u. Chir.*, 1905, Nos. 4 to 10 incl.

Subphrenic abscess is such a dangerous thing that it deserves careful study; and careful study indeed it has received at the hands of Dr. Perutz. The foregoing, somewhat extensive article, a very model of the proper critical summary is based upon 208 cases published in the last decade. In addition to these, frequent reference is made to a series of 60 cases, all from Körte's clinic, reported in 1894 by Grüneisen, and to Maydl's well-known monograph which appeared in 1894 in which 179 cases were summarized. Perutz takes up the subject first in its general aspects; then in a special way, with regard to the origin of the abscess.

Etiology:—Subdiaphragmatic abscess owes its origin in most cases to infection transmitted either by continuity or by perforation from adjacent organs; that is, the stomach, duodenum, colon, liver, spleen, pancreas, and kidney. The appendix is also frequently the source, and occasionally the female genitalia. The following figures, including all three series of statistics, are of interest.

Out of a total of 447 cases, the origin of the infection was: stomach, 111; duodenum, 12; appendix, 107; liver and gall-passages, 39; echinococcus cysts (of liver), 25; intestine, 12; pancreas, 5; spleen, 9; perinephritic, 22; thoracic cavity, 21; ribs, 6; female genitalia, 6; traumatic, 14; metastatic, 16; various and unknown, 24. Thus the two most frequent causes are gastric ulcer and appendicitis.

Pathological Anatomy:—Subphrenic abscess may be either intra- or extra-peritoneal. The latter is much the rarer. The *situation* of the abscess corresponds usually to that of the organ whence infection came; if from the liver or appendix, it is almost without exception on the right side; if from spleen or stomach, on the left, save in the case of pyloric or duodenal ulcer. It is rare for more than one abscess to be formed. Its size is very variable; the largest reported contained six litres of pus. In about 20 per cent. of the cases, roughly speaking, gas is found in the abscess, as the result either of perforation of a hollow organ, or of the action of gas-forming bacilli. Abscesses originating in stomach perforations are especially apt to contain gas (from 30 to 80 per cent. in various tables).

Symptoms:—The onset may be acute, subacute, or insidious, according to the rapidity of the infecting invasion. Thus we may get cases showing all grades of severity from that of perforative peritonitis with collapse, to those of encapsuled abscess in which fever is absent and the

patient can go about up to a few days before death, practically without symptoms. In the ordinary subacute case we find epigastric pain, stabbing pain in the chest, anorexia, often, too, cough and expectoration. Pain in the shoulder is a valuable confirmatory sign when present. Some cases begin with pulmonary symptoms alone; dyspnoea, pain in the side and chill. In a few cases, all these are lacking, and the only symptoms are fever and general malaise, which may last for weeks and end in death without clearer evidences.

As to physical signs, these are seldom quite absent. Lauenstein's remark should be kept in mind; that "the subphrenic space is no preformed space; if fluid collects in it, the necessary consequence is a displacement or adjacent organ."

A swelling is, naturally, the ordinary sign; and is situated either in the epigastrium or in right or left hypochondrium. The liver is sometimes displaced downwards. Frequently, however, owing to inflammatory paralysis of the diaphragm, the abscess collects above the liver and high under the ribs; shoving the lung up more than the liver down; this condition is given the special name of pyothorax subphrenicus; and care is needed to distinguish it from an intrathoracic lesion. The symptoms in this localisation are in the main as follows:—Great disturbance of general well-being, fever, severe dyspnoea, possibly prominence of the thoracic wall; lack of the respiratory excursion; tenderness in the intercostal spaces with, sometimes, œdema. If the abscess, hidden thus under the thoracic wall, contains gas, it is given the name of pyopneumothorax subphrenicus, first so called by Leyden. Percussion and auscultation here give a fairly clear diagnosis. With the patient sitting one finds from above downwards a clear pulmonary note, then a tympanic note. Hippocratic succession and metallic sounds can be made out low down in the thorax. Immediately above on auscultation over the layer of gas one hears bronchial or amphoric breathing as a result of the transmission of the respiratory sounds of the compressed lung into an air-space.

Complications:—Of these the most frequent is inflammation of the pleura; the infection travelling usually through the intact diaphragm. Küttner (Beitr. z. Klin. Chir., 1903, Heft 1.) has demonstrated numerous lymphatics perforating the diaphragm and running both from peritoneum to pleura and in the converse direction; so that the infectious agent is probably carried directly to the pleura by the lymphatics. No doubt, also, the bacteria may grow through the diaphragm without being carried by the lymph stream.

In general the pleuritic exudate is of a milder degree of infection

than that of the subphrenic abscess. If the latter is gangrenous and putrid, it is purulent; if merely pus, the pleurisy is serous. The latter, however, may easily go on to empyema.

Occasionally the diaphragm is actually perforated; but the opening is usually small, and is situated in the vault.

In Grüneisen's tables of 60 casts, 40, *i. e.* two thirds were complicated by pleuritic lesions, as actually demonstrated in most of the cases by transpleural operations. In the earlier cases, a break of the abscess directly into the lung through pleural adhesions was not very uncommon, and afforded one way of spontaneous cure.

Pneumonia is another not infrequent complication.

Pericarditis is a very fatal complication, all of these cases but one ending in death.

A rupture of the abscess into the free abdominal cavity occurs rather often. In a few cases it has broken into the bowel. It is very rare; in these days of early operation to find the abscess breaking through the skin.

Diagnosis:—Where severe symptoms develop during the treatment of a gastric ulcer or of an appendicitis, or where the plain evidences of abscess, a red and painful swelling, are present, the diagnosis is easy. But when, as is sometimes the case, the previous history yields no indication of trouble, and previously healthy people are seized with fever, dyspepsia, and pain in the chest, diagnosis is difficult; for the idea of subphrenic abscess is not apt to occur to one, and the dull note over the lower thorax is at first taken for a pulmonary or pleural affair. Subphrenic abscess may develop from a mere contusion of the side, to say nothing of pelvic lesions, or purely metastatic infection. In such cases, there is no finger-post pointing to the subphrenic space. When, further, a serous pleurisy complicates the abscess, as it nearly always does, it is easy to see how difficult a diagnosis from the physical signs alone may be. In this dilemma a valuable hint may be got from the X-ray examination, which will show a diaphragm shoved up and somewhat immobile on respiration.

If, however, gas is present in the abscess, the diagnosis is made easy by the recognition of the three layers—a flat note over the pleuritic exudate, a tympanitis one over the gas, and again a flat one over the pus.

Pneumonia is also hard to exclude. Frequently, the sudden onset with chill, pain in the chest, dyspnoea, together with dulness over the lower posterior chest, lead one astray. In other chronic cases, the dyspnoea, cough and expectoration are referred to a pulmonary lesion,

whereas, in truth, the cough is due to pleural complication, the expectoration to a breaking through of the abscess into the lung or to secondary inflammation of the lung, and the dyspnoea to paralysis of the diaphragm. Case reports show that mistakes in diagnosis along this line are the most frequent, and fraught with the most fatal consequences. Men like Kocher, Schlesinger, and Gerulanos have treated cases of pneumonia and found a subphrenic abscess on the autopsy table.

The first step in preventing such catastrophes is to remember the possibility of the thing. Once thought of, as Fenwick and Broadbent emphasize, the extremely sick look of the patient which is not like that of pleurisy or pneumonia, the dyspnoea, and this septic appearance will force one to a very careful hunt for subphrenic abscess.

Of course exploratory puncture is necessary. Yet a negative result, or even several such, do not exclude abscess. A positive result cannot decide between subphrenic abscess and empyema. The last decision is reserved for operation. Occasionally both are present, and cases have died because the surgeon opened the empyema and overlooked the other.

Prognosis:—How closely the outlook depends upon early recognition and early operation is shown by a comparison of Maydl's cases before 1894 with those reported since 1894.

Of Maydl's 178 cases, only 74 came to operation; and of these 48 per cent. died. Of the 268 cases (Grüneisen and Perutz) of the last decade, 215 were operated, with a mortality of only 27 per cent., that is an improvement of over 20 per cent. In the non-operated cases, the mortality was from 85 to 94 per cent. in both statistics. The most brilliant gain on the side of operation was in the gastric ulcer cases, in which Maydl's mortality of 70 per cent. was reduced to 30 per cent. in the later cases. In all the fatal cases, death was not due to the operation, but to complications, such as pneumonia, empyema, multiple abscesses, exhaustion, etc.

Treatment:—At the present time, practically the only treatment considered is operation with drainage; this may be either a laparotomy or a transpleural operation with rib-resection, according to the situation of the abscess. In the case of the latter, precautions must be taken to avoid infecting the pleura, either by packing or by suturing the two layers together before incising the diaphragm. But frequently the lower part of the pleural cavity is already cut off by adhesions—this occurred in one-third of Grüneisen's cases,—and infection need not be feared.

Following this general consideration of the subject, Perutz proceeds

to discuss subphrenic abscess in a more special way, with reference to the origin of the abscess; *e.g.*, those of gastric origin, those of appendical origin, etc. The length of the article and lack of space prevent our giving further extracts, but the interested reader will find it exceedingly worth reading. Many apt case reports are given; and the whole subject is put in a clear light.

E. W. A.

CHARLES GREENE CUMSTON, M.D. "Remarks on the Present Status of Surgical Treatment of Hepatic Cirrhosis." *Boston Medical and Surgical Journal*, August 10, 1905.

For many years hypertension of the portal vein has been considered the cause of ascites, but, as a result of laboratory research, pathology, surgical physiology, and exploratory laparotomies, such purely mechanical cause has been shown inadequate to explain many of the cases. It is more in conformity with our present knowledge to attribute ascites to a peritoneal reaction. The large majority of authors attribute ascites to peritonitis in instances of the hypertrophic form of alcoholic cirrhosis. Kelynach's statistics of 1902 show that tuberculosis plays a very important part in the production of ascites, inasmuch as in 131 cases of undeniable cases of alcoholic cirrhosis the existence of tuberculosis was present in 23 per cent. This existence is seen especially in cases of large livers, and in some of these the tuberculosis appears to play the preponderating part. However, tubercular infection cannot apply to all cases, and it would seem reasonable to admit that there is also some disturbance in the peritoneal cells arising from the influence of a defective circulation, or from an intoxication due to hepatic insufficiency. The poisoned cell excreting salts, and particularly sodium chloride, will give rise to an exosmosis of serous fluid, because the presence of the salt in the peritoneum will cause isotony to be defective. With reference to treatment it is all important that an exact diagnosis of the cause and type of cirrhosis be made. Thus in cardiac cirrhosis operation must necessarily be a failure. So also in malarial cirrhosis the results cannot be very successful, seeing that these cases present a general complex process of intoxication and hepatic insufficiency. In the last class, nothing can be hoped for from omentopexy, but if the chronic peritonitis may be considered the cause of the ascites simple laparotomy without drainage should be preferred. Syphilitic cirrhosis will hardly ever be benefited surgically; while in the tuberculous type, if the infection be limited and the peritoneum appears to react, a laparotomy will frequently result in a cure of simple ascitic tuberculous peritonitis. In the hypertrophic type of the so-called alcoholic cirrhosis we find the

best results. They may be treated by puncture, incision, or omentopexy. In this type it must be remembered that usually tuberculosis is the principal etiological factor and it thus becomes a curable disease. In those cases where medical treatment and puncture have been unsuccessful, laparotomy without drainage is the writer's plan of treatment. The atrophic type is a much more serious condition. Here the liver cell itself is badly damaged as proven by the presence of urobilin in the urine. If the peritoneum is healthy, omentopexy may be done, and this will prevent the production of anastomoses in the lower part of the œsophagus, the anal region, and the system of Retzius. If the peritoneum is markedly diseased omentopexy should only be considered if portal hypertension menaces the patient's life, and is at best an emergency operation. Where we have an infection of the gall-bladder added to the cirrhotic condition of the liver omentopexy, combined with drainage of the gall-bladder may prove satisfactory. In view of the great difficulty of arriving at a definite diagnosis from a purely clinical examination exploratory laparotomy is advocated on account of the great help in diagnosis and its curative value.

JAMES A. KELLY, M.D. "Dislocation Forward of the Atlas, with Fracture of the Odontoid Process of the Axis." *Annals of Surgery*, August, 1905.

This rather unusual accident was caused by a man, while intoxicated, falling and striking his head on a sharp corner. He was brought to the hospital for the scalp wound, but further examination showed the above condition to exist. The head, held rigidly, was in a position of extreme dorsal flexion and rotated slightly to the right, the chin hung depressed upon the chest. There was moderate spasm of the neck muscles, while over the posterior aspect of the upper cervical vertebræ there was marked swelling and tenderness. There was no crepitus, but the spinous process of the second vertebra was prominent, and the distance between the process and the occiput was increased. There were no symptoms of motor or sensory paralysis. Treatment consisted of the application of a well-fitting felt collar and placing the patient in a semi-recumbent position upon a head rest. He left the hospital about one month later and began work as a day labourer. The absence of pressure symptoms prove conclusively that a fracture of the odontoid process must have been present in combination with the dislocation, since anatomical preparations show that such would have occurred unless the odontoid process had been fractured.