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Headache*

DR. S. J. MACLENNAN

WHEN I was done the honour of being asked to read a paper before this Society, I thought it wisest to write on a subject that would be of equal interest to the specialist and to the man in general medicine. With that in view I beg to offer for discussion the symptom of headache. It is an old trouble and is one of the most universal of the distressing complaints that afflict mankind.

It was known to the Greeks as "Kephal algia" which merely means "pain in the head" and was discussed by Aristotle. This is about the only reference to it that I can find in Greek. It is not, as far as I know, mentioned by Hippocrates except in one instance and hence one might infer that it was not very common among those people. This we might easily understand in view of their mode of life, as they had a much more intelligent and detached outlook than the people of modern times. In more recent times it has often been mentioned by poets and philosophers, some of whom have been its victims,—notably Thomas Carlyle. In the popular mind there seems to be a fixed idea that headache is almost always caused by some affection of the eyes which may broadly be termed "eye strain." In all probability there are good reasons for this opinion if we consider the complex condition of things in our highly artificial civilization, which puts strains upon the eye that are very difficult to realize. It is probably now agreed that the eye is the dominant sense organ of the body and although from long established custom we think of habits and conditions under which we live as normal, yet it is not at all certain that the eye has evolved to cope with them without difficulty, though the fact that it does meet the demands put upon it is highly suggestive of the adaptability of living organisms. The gross errors of refraction rarely cause any irritative symptoms. If we consider children who have short sight and are allowed to grow up without its correction we find that they are living in a very limited world. They are not often practical and may be awkward. They may avoid sports, but they do not suffer from eye strain.

It is rather the smaller refractive errors that produce headaches—headaches ranging from a mild degree to that of a condition which may simulate serious organic nervous disease. Let us see how this may be produced. The normal eye will receive clearly defined images of distant objects on the retina without any strain. If however, an object close at hand is viewed the refractive power is altered by an effort of the ciliary muscle while the eyes converge through the action of the internal recti. These actions of the ciliary muscle and the internal recti are synkinetic and work smoothly together. If these balanced conditions are upset in any way strain results. For instance, in a long sighted person, when the eye is at rest the retina receives only blurred images. The reason is that the anteroposterior diameter of the eye is shorter than normal, and rays of light will come to a focus behind the retina. If long sighted person or a hypermetrophe as he would technically be called, wishes to see clearly he has to force his ciliary muscle to act and the closer

*Read before Halifax Medical Society, February 7, 1934

the object is brought to him the more effort must the ciliary muscle make. If the refraction of one eye differs from that of the other and the correcting effort has to be unequally made, the strain will be still greater. Now, if we add to this an astigmatism in which the curvature of the cornea and lens are asymmetrical so that the rays of light focus not in a point, but in a line, we have added a still greater factor of strain. Again to the load on the already overburdened eye we must take into consideration those cases where the extra ocular muscles are not correctly balanced, so that the eyes at rest are not parallel. Here the effort to bring them into line, in order to obtain binocular vision, adds a further great strain. Then also there is the fatigue of the interpretation of these blurred images in the higher brain centres of vision just as in some cases of deafness cerebral fatigue is caused by the effort of interpretation of sound. These conditions are generally clear enough, but it is necessary to consider symptoms which may be generally described as "referred". They may occur in almost any variety and be referred to any part of the distribution of the fifth cranial nerve. In detail, the pain may be found in the region of the eyes, but it may also be frontal, temporal or vertical and may spread down the bulbospinal root of the 5th nerve causing hyperaesthesia of the upper cervical segments and bring about an occipital headache which may extend down the neck to the arms. It may remain limited or may be associated with a tender area in the temple or vertex, but usually when limited it is located in the region of the eyes. The character of the pain also varies. Sometimes it is superficial like a hyperaesthesia of the skin, and sometimes it is deep-seated and throbbing. It may be permanent or periodic, and may or may not be associated with the use of the eyes. Generally speaking the pain comes on at the end of the day following use of the eyes, but sometimes it is more evident in the early morning. In my experience early morning pain is to be found relatively more frequently in the strain of presbyopia than in that of ordinary refractive conditions. Errors of refraction may occasionally cause vestibular symptoms producing dizziness and vomiting. This symptom complex occurring periodically and associated with acute headache may resemble a true migraine. The close association of the descending root of the 5th nerve with the nucleus of the vagus may be responsible for these gastric disorders, just as it is a common experience to find that pressure with an aural speculum on the walls of the external auditory canal may produce a fit of coughing due to a reflex from the auricular branch of the vagus. A similar reflex irritability of the 7th nerve may occur producing habit spasm and choreiform movements. This seems to be a long and severe combination of symptoms to be attributed to errors of refraction and I would hardly blame anyone for thinking that I am reading a fairy tale. Yet I can assure my audience that this is quite a modest statement in comparison to some of the things that have been written by enthusiastic ophthalmologists.

However, one must use a balanced judgment. As eye strain conforms to no one type and simulates most types of headache, it is certainly difficult to diagnose. When suspected, the only rational course to pursue is to make a systematic examination of the eyes and be governed by one's findings. Probably the majority of medical men would agree that no case of obscure headache should be treated on general principles without the possibility of eye strain being eliminated. It behooves us to be very careful and not be carried away by over-weening enthusiasm so that we attribute to eye strain severe symptoms that are more likely to be explained by other causes. A

refractive error may bring about for instance a train of symptoms resembling migraine, but cannot be considered a cause of true migraine; and this statement applies to other conditions as well. Very often a neurotic temperament is associated with optical anomalies and may be the means, if not the cause, of the aggravation and continuation of psycho-ophthalmological states.

It is more frequently in women that troubles which do not seem to have any organic base are quite definitely and permanently referred to the eyes. Some of these patients will insist that they cannot use their eyes for any length of time, or even that they cannot see at all. Sensitiveness to light is especially marked, and they demand dark glasses which in time makes the eyes more sensitive and so bring about a vicious circle. The symptoms may be a sense of pressure or emptiness in the head but not often the clear cut statement of pain generally used by those who have organic headache. These people, if they have any refractive error at all, will likely be able to show a multiplicity of glasses, and will truthfully say that they have not been benefitted by any one of them. Some people with virtually no error of refraction refer symptoms to their eyes, and have got into the habit of considering every passing pain in the head as due to eye strain. In this conviction they have been confirmed by the numerous advertisements of the so-called Optometrists and the manufacturing optician. I very well remember a few years ago receiving an advertisement from an American manufacturing optical company with the motto at the top of the first page "Our aim to make America eye conscious." Could any suggestion be more disastrous than that for the poor victim of ocular neurasthenia?

In this connection one might be permitted to make a diversion to call attention to a serious state of affairs. In our midst and all through the country are men posing as eye specialists under the specious term of optometrists, armed with imposing apparatus, who advertise a free examination of the eye, but sell glasses at such a profit that a fee is indirectly made that would for its size compare most favourably with that of any oculist. From the standpoint of the public there would not be much harm done if this were all, but I think that most oculists can bear testimony to the fact that disastrous consequences arise from serious conditions of the eye being overlooked.

One or two instances stand out clearly in my memory. These people gave the history of having had frequent changes of glasses made by opticians for periods of 1 to 2 years and still complained of failing sight. I found them suffering from chronic glaucoma, and in one case the nasal field had contracted so close to the fixation point that I did not dare operate. In the treatment of refractive errors the greatest care is essential, and it must always be remembered that the eye is not an independent member of the body whose error can be measured and a corresponding glass prescribed, but is a vital organ which should be considered an essential part of the brain stem. As has been mentioned before, the larger errors of refraction are not so productive of headache as the smaller ones, and it is very essential that in the attempted correction of large errors we do not produce small ones.

At the present time one cannot help feeling that there is a tendency to prescribe too many glasses. This is especially true in prescribing glasses for young hypermetropes with very small errors, as thereby they are deprived of the stimulation of accommodation.

The wholesale correction of trifling errors of astigmatism may also be overdone. This can be appreciated if we realize that the eye is not an accurately

centred nor a corrected optical system, but has unknown errors of spherical, chromatic and astigmatic aberration so that no optically perfect image is ever formed.

In all these cases a very careful history of the patient's habits should be obtained and also some attempt should be made to estimate his or her nervous tolerance.

The typist who works long hours with almost constant use of the eyes and especially in an office with poor ventilation, and whose general condition is below par, will require aid from glasses that the person who is leading an outdoor life with moderate use of the eyes would never dream of demanding. To be in one instance rather specific, I don't think that hypermetropia under 1. Diopetre will ever produce headache in a healthy person who is leading a moderately natural life. I think the same can be said of astigmatic errors of .25D especially if they are with the rule, but I think that most people would agree that in cases similar to that of the typist just quoted there should be an exception to the rule. I think we fail in our duty to many patients if we merely prescribe lenses for refractive errors and let it go at that. May I quote at this juncture from Duke-Elder, one of the ablest of the present day British oculists—

"Apart from the condition of the eyes themselves nothing is more pernicious than the routine correction of optical defects by rule of thumb methods. The matter is much more subtle and far-reaching. Muscular deficiencies must be investigated and neutralized when necessary and the limits of muscular work must be respected and the treatment accordingly regulated. Many symptoms that are apparently caused by refractive errors or muscular anomalies would give no trouble in the ordinary course of events, and become apparent only because of ill-health or on the attempt to do more work than the individual is capable of accomplishing with safety. If a rest and general tonic treatment are prescribed these symptoms frequently disappear without help in the form of glasses. Just as there is little pathognomonic in the symptoms of eye strain, and that frequently when they simulate general disease their origin in the eyes may be overlooked by the general practitioner, so conversely symptoms which may appear to be due to refractive anomaly may be due to an entirely different cause.

To my mind one of the wisest suggestions in this quotation from Duke-Elder is the statement that many "symptoms occur on the attempt of the individual to do more work than he is capable of accomplishing with safety." Many people, no matter how accurately their refractive anomalies have been corrected, can only do so much work with the eyes and remain comfortable. The majority of people do not realize this, and vainly imagine that there must be some sort or another of lenses that will allow them to use their eyes constantly, irrespective altogether of their constitutional condition. To the great credit of the adaptability of the eye this may in some cases be true but decidedly not in all. I have possibly discussed the refractive headache at greater length than necessary, but I realize that I have merely gone a very short way along the consideration of this distressing symptom.

We may here discuss as next in order the headache of nasal origin. The most common cause of headache in nasal conditions is congestion or infection of the nasal sinuses which in our climate is very frequent. No great difficulty will likely be met in the diagnosis of acute sinusitis. The history of "cold in the head" the acute pain and the probable discharge in the nose will readily

lead to the diagnosis. More difficulty may be experienced in the cases in which the acute symptoms of a cold and congestion of sinuses have passed off. The patient begins to have rather depressing headaches which threaten to become chronic. The pain is usually unilateral and may be in the forehead or vertex or occiput. Many textbooks state that the sinus involved can be suspected from the position of the pain—antrum and frontal sinus infection causing frontal pain while ethmoidal and sphenoidal infection cause pain in the vertex and occiput. I do not deny that with ethmoidal and sphenoidal infection there may be vertical and occipital headache, but from personal experience I know that infection of the antrum can produce pain in almost any part of the head. I cannot pass over headache of nasal origin without referring to the views of Sluder who speaks of "vacuum headaches." This class never has pus in the nose, and most of the symptoms seem to be referred to the eyes with a tender spot over the attachment of the pulley of the superior oblique. The outlet of the sinus is supposed to be more or less closed and the air is partly absorbed in the sinus, and negative pressure makes the walls sensitive. These cases are supposed to be more common in the narrow nose, especially when associated with deviation of the septum. A great deal of scepticism about these conditions is manifested by many Rhinologists in which opinion I must confess that I share.

I now pass on to mention some of the types of headache that may interest in greater degree men who are engaged in general medicine. It would seem natural to first consider headaches due to organic cerebral disease. The pain in these cases may frequently be nocturnal, and may be intense and sometimes paroxysmal. Several associated symptoms may be present even in an early period, and their recognition is important. With the headache there is often vomiting which may be projectile in its character, but at least is not associated with nausea nor with the taking of food. There is often present optic neuritis which may or may not be accompanied by imbalance in the extrinsic ocular muscles and inequality of the pupils. I remember once having seen a young man who gave a history of severe headaches for several months accompanied by periodic attacks of vomiting. He had obtained a pair of glasses from an optician who was proposing to change the lenses when his physician persuaded him to see me. He had excellent central vision, but there was present vertical and lateral diplopia with very definite choked disc, enlarged veins, punctate haemorrhages and the discs swollen on one side to 5 D and on the other side to 3 D. The impression was that he had a brain tumour.

In passing, one might mention headaches due to irritation of the meninges and also those due to arteriosclerosis of the intracranial vessels. These headaches may be severe enough to approach that of brain tumour. Inasmuch as rise of ocular tension is sometimes found in association with arteriosclerosis of the intracranial vessels, (I do not suggest any necessary association) there may be some difficulty in differential diagnosis though it is fair to say that chronic glaucoma as a rule does not give rise to much pain. I remember some years ago an elderly woman coming to me complaining bitterly of headache and convinced that it was due to the condition of her eyes.

On examination I was equally convinced that her eyes were not responsible for her pain, in spite of the fact that she had a chronic glaucoma, and finally a neurologist made a diagnosis of arteriosclerosis of the intracranial vessels.

I should like here to lay emphasis on the question of toxæmia which in my opinion is the most frequent source of headache. This may arise from any

focus of infection but I think it is most frequently caused by absorption from the intestinal tract. There may be dull pain with a sense of pressure in the head, and it may be referred to almost any part, but especially to the frontal region and the eyeballs. If there happens to be some error of refraction present, the eye symptoms may appear greatly aggravated.

Very often an analysis of the urine will reveal the presence of an excess of indican, and here one touches upon a greatly debatable subject. I realize that many physicians attach no importance to the presence of even large quantities of indican in the urine, but my own experience has been that in association with certain symptoms it has great significance. The late Charles Simon of Johns Hopkins was very emphatic in this respect and said—"I cannot agree with those who say that the study of Indicanuria possesses no importance and I maintain that an examination of the urine in this direction is as important as an examination for albumen and sugar, and that points of decided importance not only in diagnosis but also in treatment may thus be gained."

Another insidious type of headache is that associated with uraemia. This may vary in intensity from a slight frontal pain on rising in the morning to one of intense vertical or a general Cephalalgia. If associated with vomiting, dyspnoea or drowsiness, inasmuch as these symptoms are suggestive, probably an examination of the urine will be made and the kidney condition revealed. As one remarked earlier in this paper no physician would be justified in treating a headache on general principles without eliminating refractive causes, so here we might be emphatic in saying that every patient complaining of headache should have his urine examined. It is of course, common place knowledge that high blood pressure can cause headache, but possibly it may not be so well known that it often accompanies low blood pressure associated with cerebral anaemia and feeble heart action. Another vascular cause is venous congestion which may account for the headache felt on rising in the morning after sleeping with the head too high or too low.

I have no doubt left out of consideration several types of headache, and some may wonder why I have omitted hysteria; which I have not mentioned except in eye conditions; but my personal experience of this type of trouble is very slight, though I have the feeling that it is a diagnosis only to be made as a last resort, as sometimes its differentiation from organic trouble may call for discrimination of the highest degree. In conclusion I must say as you have probably now realized that I have contributed very little to the elucidation of this matter; but I shall be quite content to accept the Socratic position as described in Plato's Theaetetus by acknowledging that I am not at all wise and know little but I trust by the grace of the Gods that I have been able to stimulate you to bring forth knowledge by a discussion upon this subject.

Anaesthesia In Fracture Therapy

DR. ARTHUR L. MURPHY

THE purpose of Hippocrates in benumbing his patient's senses with wine as a pre-operative measure, was two-fold. Of first moment was the relief of pain and scarcely less important, the need of keeping him quiet so that the surgeon might strike twice with some hope of hitting in the same place. This latter nicety has progressed, with modern anaesthesia, to the point where we speak of it as muscular relaxation. It is an acknowledged pre-requisite for successful abdominal work and yet, too often, we are inclined to consider it unnecessary in the reduction of fractures. The attitude taken is this if the patient is willing to stand a little pain, the delay, inconvenience and added expense of anaesthesia are avoided; if he is not so heroic, a light anaesthetic, sufficient to abolish superficial, conscious stimuli and confer an amnesia, is enough. The fallacy of these arguments is often recorded for posterity in the post-reduction X-ray film.

In the accurate reduction of displaced fractures of the long bones complete muscular relaxation is essential. Otherwise the operator is working, not only against the natural contractile power of the muscle but against the sub-conscious volition of the patient as well. This is overcome only by a sound third stage anaesthetic.

A thorough relaxation may be attained in suitable cases by local anaesthesia. The use of nerve block in the major trunks to the limbs is never an anaesthetic of first choice. Its technique is difficult, its results uncertain and it is not without danger. A complete sensory infiltration above the site of the fracture is tedious and unsatisfactory. The technique of infiltration for fracture therapy has the cardinal advantages of simplicity and complete efficiency with two provisos; first, that the patient is not unduly nervous (a pre-requisite in all local anaesthesia); and second, that the reduction is attempted within twelve to twenty four hours of the time of the fracture.

Two per cent. novocaine is used. A small intradermal wheal is made over the site of the haematoma in the fracture area. A larger bore needle is now introduced and manipulated until blood stained serum wells up. Twenty to forty cubic centimeters of the novocaine are injected directly into the haematoma. There is no need for further infiltration. The haematoma takes care of that, bathing the fragment ends in the novocaine solution. A little massage may be necessary to reduce the congestion and aid in the further dissemination of the anaesthetic. In fractures of both bones, in the forearm or leg, where the breaks are at about the same level, the two haematomata may or may not communicate. The haematoma about the larger bone is dealt with first and it may then be determined whether a second injection is necessary.

In that most difficult of simple fractures, a fracture of both bones of the forearm, this method is ideal. The anaesthetic may be given almost anywhere and the patient brought to the fluoroscopy room for reduction and application of cast or splint. An X-ray may then be taken and if necessary, a second reduction attempted before the effect of the novocaine has worn off.

Studying the check-up film, it should be borne in mind that the great congestion about the bone fragments may, in this type of fracture, prevent a perfect apposition, but that if the cast has been properly applied with regard to lines of traction and stress, a film taken two to three days later will reveal a marked improvement in the reduction.

The haematoma about the fragments of a fracture tends to organize after twelve to twenty-four hours. Once organization is established this method of anaesthesia is, of course, a failure. The extent of organization can be determined by palpation and by the freedom with which the blood wells up into the anaesthetizing needle. Twenty c.c. of 2% novocaine is sufficient for a Colles' fracture. 40 c.c. is usually necessary for the tibia. If larger quantities than this are required, it is better to use a 1% solution.

The sense of discomfort present when a large area of skin and subcutaneous tissue is infiltrated with novocaine, is almost entirely absent in this form of anaesthesia and the operator must guard against the patient's so far forgetting his disability as to attempt using the injured member. The freedom from pain, with a little gentle massage to the associated muscles, will result in a complete relaxation comparable only to that obtained under deep general anaesthesia. Strict aseptic precautions are taken in the injection of the novacaine and there have been no reported cases of osteomyelitis.

Basal anaesthesia finds its place in the treatment of fractures of the femur and spine. In fractures of the shaft of the femur where reduction is to be attempted by Thomas splint and Buck's extension an appropriate dose of the basal anaesthetic is given as soon as possible after the patient's admission to the hospital. The apparatus is applied and traction exerted to the extent of about fifty pounds, the bed being well elevated at the foot for counter traction. This weight and position, extremely uncomfortable to the conscious patient, will be borne in silence and the added degree of relaxation obtained will make for a speedy reduction. The anaesthesia is maintained for about twenty-four hours. At the end of that time X-ray will usually reveal the fragments in alignment where they may be held by a weight of approximately twenty pounds with a corresponding lowering of the counter traction and increased comfort of the patient.

In fractures of the spine where some form of hyperextension is desired previous to the application of a plaster jacket, basal anaesthesia is again of proved value. The method we use is this: Following basal anaesthetic the patient lies on his face on a Balkan frame. This consists of the usual frame with a single canvas strap extended from end to end, free on the sides. As the weight of the patient stretches the canvas a gradual hyperextension is produced and after three or four hours the plaster jacket is applied over both canvas and patient, the canvas being slipped out after the plaster hardens.

In conclusion: The judicious use of anaesthesia in cases where it is not commonly employed may lead to better results in fracture therapy.

Ultraviolet Radiation In Dermatology.

DR. C. M. JONES

Department of Radiology, Halifax Infirmary.

ALL radiation is supposed to be propagated as a series of waves and is defined as "an electromagnetic disturbance of the ether." The range extends from radio with a wavelength (from the crest of one wave to the crest of the next) of miles to cosmic radiation with a wavelength of one hundred millionth of a millimeter. Ultraviolet radiation comprises a small band in this electromagnetic spectrum just beyond the blue part of visible light.

It acts in many ways like light—can be reflected and refracted, and detected by photography and fluorescence. One point should be noted—albuminous compounds absorb more of this ray than other chemical compounds.

The sun is the largest artificial producer although only 7% of the radiation is ultraviolet and most of the beneficial action of sunlight is due to the rays.

Artificial sources are the carbon light and arc and the mercury vapour lamp. The mercury lamp is by far the best, 28% of its radiation being ultraviolet.

Biological action of ultraviolet:

On the Skin.

1. Bactericidal—Five seconds exposure to ultraviolet has completely killed a culture of staphylococci and B. coli.
2. Formation of new cells by stimulation of the basal layer of the epithelium.
3. Pigmentation—Increase in the amount of immune bodies. Best therapeutic results appear after pigmentation.
4. Hyperaemia—Increased blood supply with increased nutrition.
5. Analgesia—Due to the action on the nerve endings.
6. Exfoliative action—Psoriasis and acne depend on this factor to produce results.

General effects.

Stimulation of metabolism especially calcium. General increase in resistance.

Conditions in which ultraviolet Radiation is useful:

Pruritus—All conditions of which pruritus is a symptom must be ruled out i.e. diabetes, goitre, blood diseases, cirrhosis of the liver, uterine disease, G. P. I, Tables, pediculi, oxyuris, jaundice, uraemia. The diet should be regulated. Occasionally pruritus is the first sign of cancer of the colon. When all these have been investigated and found wanting and specially if the pruritus is paroxysmal in character ultraviolet is helpful due to its analgesic action. In pruritus due to fissures and sinuses the radiation will aid healing.

Bromidrosis—Excessive sweating and its unpleasant odor is alleviated, although X-Ray will produce a permanent cure.

Burns and Scalds—Large doses will stamp out the infection following burns and small doses will stimulate regeneration.

Dermatitis venenata—Specially when due to poison ivy is quickly cured in 1-3 treatments.

Ulcers—Large doses are given to kill the organisms and then small regenerating doses. Also of value in bed sores.

In skin grafts small doses will hasten results.

Furunculosis—Large doses are given and will abort the lesion and then general irradiation to increase the resistance of the body.

Lupus—The subject of much argument. One case of the telang-ecttic type was cured in 3 exposures. X-rays will also quickly clear up this condition.

Keloid—Has been advised but better results with X-ray.

Port wine stain—The watercooled lamp with pressure will cause a great decrease in the size and color and occasionally cure this lesion.

Sycosis—Complete epilation with X-ray is the only cure for this intractable condition.

Alopecia areata—Produces the best results in recent cases though cures of 30 years baldness have been reported.

Ringworm of the skin—One sharp erythema dose will cure this condition.

Erysipelas—One intensive treatment will cause relief of pain, diminution of the swelling, and fall of temperature. One patient treated and cured in 2 days. Ude of the Minneapolis General Hosp, in a series of 100 cases reports average cure—3 days.

Psoriasis—Ultra-violet will clear up all lesions though the treatment in the indurated types may require rather prolonged exposures. A single exposure of X-ray will hasten the result. It is claimed that a general erythema once every 6 weeks will prevent recurrence for years.

Ichthyosis—Occasion cures are reported.

Acne—Mild early cases quickly respond but chronic cases with considerable scarring should be treated by X-ray. General treatments are given for often an associated anemia and dietary measures are necessary. The dose must be sufficient to produce exfoliation.

Seborrheic dermatitis—Rapid cure—1-3 exposures. In the scalp the hair must be closely cut.

Herpes—This is the best treatment. Before vesication a sharp erythema given will prevent the occurrence of the vesicles. Pain rapidly disappears and 1-2 weeks cure usually results.

Impetigo—Cure within a week. 3 cases cured in 4-6 days. Due to the sterilizing action of the radiation.

Pityriasis rosea—Few treatments rapidly effect a cure.

Eczema—Of distinct aid, specially in the subacute and chronic types. The exciting cause must be removed and the general metabolism studied. In the acute type Ultraviolet is contraindicated. Types associated with staphylococci and streptococci respond well due to the bacterioidal action of the rays. The types associated with anaemia and rickets in children are benefited by the general irradiation.

Early Days of The Halifax Infirmary.

ARTHUR L. MURPHY

IN the late winter of 1866 the barque "England" put out from the port of Limerick. Crowded on her decks and below were thirteen hundred immigrants, eager for the new world. Graced by wind and current the England made a smooth, swift crossing. On the tenth of April her passengers were jostling one another against the rails, expectantly scanning the horizon for land. They were in high spirits. The voyage, they felt, was auspicious. It promised fortunes to be won. The ominously calm sea, the clear visibility were to them only further proofs of the gods' favor. A long black bar appeared on the western horizon and the joyous cry of "land!" arose. There was no rejoicing among the crew. Within an hour the sky was overcast, the winds were whipping the sea to a fury. Terrified passengers were crowded below and the hatches jammed down. The England weathered the storm, but in her ill-ventilated, sweaty holds were enemies far more deadly. On the thirteenth of April she entered Halifax harbour laden with suffering and death. Already three hundred had died and been buried at sea. Hundreds more lay below, the victims of Asiatic cholera.

Seventeen years before, in 1849, the Sisters of Charity had first been established in Halifax by the Most Reverend William Walsh, D.D, the first Catholic Archbishop of Halifax. Their duty was that of conducting a boarding academy for young ladies and teaching in the parochial schools. A full, well-defined task, this, for the four Sisters who were the nucleus from which the order was to branch throughout the whole of Canada and back into the United States, its mother country. But so intimate, so irrepressible was their devotion to human misfortune they could not confine themselves. Within two weeks of their arrival they had taken the responsibility of their first orphan charge. Their spare moments they devoted to the many sick throughout the poorer parts of the city. There was no hospital and to these unfortunates they must have seemed nurses, providers and ministering angels, all in one.

It was natural, then, that when the ill-fated England discharged her poor cargo in quarantine on McNab's Island the Sisters of Charity should be among those called on to volunteer as nurses. They responded in all and three were chosen to go with the four physicians from the city. One of these was Sister Mary Vincent who was later to be identified with the first Halifax Infirmary. A woman of broad capabilities and deep understanding, she embraced this work of charity with the ardor that characterized all her efforts.

As the Island came into view the Sisters could see a file of men bearing coffins. It was evening and the doctors, assisted by those who were able, spent these twilight hours burying the day's victims. Theirs was a common grave. The cholera made no distinction for caste or creed. If the day's toll were too heavy the dead lay in the field to wait the next evening.

The Sisters' "hospital" was a small house, the only one on the island, and the owner bequeathed with it all that he could not, in his haste, carry away; for which they were duly grateful. There was a stove, a table, two chairs, an old sofa and four beds replete with straw mattresses. Dr. Slayter, the city health officer, who had been on the island since the ship's arrival

welcomed the Sisters and promised to return in the morning. He did not come back. By morning he, too, was waiting his turn, in the field.

The cottage was soon made ready and the children being given the first consideration, were taken from the tents where the sick were sheltered and given warm housing and nursing care. Sister Mary Vincent and her cohorts persevered. Many more died; some got well. And in its time the scourge passed.

It is nineteen years later that we again find record of Sister Mary Vincent stepping beyond the confines of her classroom. Doubtless there were many other occasions which she did not, in her modesty, deem worthy of reporting but this event prompted her to a written record. The paper is faded and yellow, the ink has paled to grey. The handwriting is vigorous, dashing, and the whole has the nonchalant style of a second lieutenant's official report of a sortie, to his commander. It is titled, "Happy Days" and has to do with certain happenings in the Waverley House, which second-rate hostelry had recently closed its doors to a fortunate public.

"One bright May morning in '86 I was sent, without soap, pail or pitcher to spring-clean the 'Old Waverley,' corner of Barrington and Blower Streets. Having partially completed the arduous and repugnant task, became anxious to learn name of prospective occupant, but was advised to go on as if house were my own.

"At St. Patrick's High School Exhibit, His Grace (the Archbishop) advised my taking a few of the paintings to 'my house'.

"Thinking the property belonged to the Archbishop or one of his friends, I remarked: 'Whoever intends living in *that* house should get their coal supply now at the reduced rates.' 'That,' replied His Grace, 'is the Sisters' lookout.'

"Surprised at his remark, I immediately informed Mother in hopes of receiving a little light on the matter, but was again kindly encouraged to 'continue my good work.'

"Unable to procure assistance, because of insufficient funds, His Grace donated \$25, which amount I paid two women for services rendered.

"May 29th beheld the expulsion of last rodent, rooms re-painted, papered, etc., etc., and everything in readiness excepting the cellar, which, having no gondola, we had been forbidden to explore. It, however, was drained after a short period, and I, with my co-workers, Sisters Gregory, Austin and Teresa, opened a Home for Aged Women."

The boarding academy of 1849 had grown to an orphanage in two weeks. The home for aged women maintained its strict status for little longer. Early in '87 an old lady, post-operative from a carcinoma of the breast was admitted on the special request of Dr. McKay. A short time later, another old lady, one of the original inmates, developed a surgical condition and refused to be moved. The Sisters' community room was converted into an operating room and the old lady justified her stand by a speedy recovery.

Thus it came about that the Victoria Infirmary was born, later to be re-christened the Halifax Infirmary. This was to avoid confusion with the Victoria General Hospital which, though in existence prior to 1887, did not adopt its present name until some years later. The Hon. Dr. D. McN. Parker was president of the staff, Dr. Farrell was assistant and Dr. Black secretary. Dr. Tobin was eye and ear specialist and the other attending surgeons were Dr. Anderson and Dr. W. B. Slayter whose brother had died on McNab's Island twenty years before.

The register was kept by Dr. Black and no patient admitted without first having consulted a member of the staff. The rates ranged from five to eight

dollars, much as they do in our hospitals to-day, except that this was not for a day. It was the weekly rate. The house was still open to the old ladies at one hundred dollars a year. It took thought and worry and perhaps prayer to run an institution on such an income. There are records of endowments promised but never made; of endowments made only to be eaten into and beyond in service demanded. There is no note of complaint. The records deal with these matters happily, almost facetiously. Nor were all their troubles financial.

Imagine the Victoria Infirmary in the early hours of a mid-January morning, 1888. An emergency case is brought to the door on a stretcher. The night portress leads the way up the narrow, twisting stairs to the third floor, the stretcher follows her, dipping precariously on the turns. The portress hurries on to rouse the staff. They are, for the great part, day and night staff in one. Sister, the night portress is stoker as well. In the kitchen the range must be lit and hot for the sterilizers. The stove in the operating room is burning low. She carries the coal in a paper bag and deposits the whole in the base burner. More coal is needed for the many stoves throughout the halls and to each is given its paper bag quota. Thus she eliminates the clatter and rumble, the dust, ordinarily essential features of stoking a base burner.

In the meantime the kitchen has been converted to sterilizing room. A large double boiler is set up of two tubs. The instruments are put in the inside tub, which has a perforated bottom, and bathed in the steam rising from the larger one. Wet with vapor, they are dried in the oven and made ready for the operation room. Listerian principles are maintained to the last detail and beneath an oscillating gas flame the operation goes on.

Asepsis in the "Old Waverley" was an ideal attained only through arduous labour and the most scrupulous of care. Working with the crudest instruments the Sisters upheld a surgical standard the equal of any hospital in the land—a sterling tribute to the consummate fidelity with which they carried out their work.

The Infirmary thrived. It grew in popularity with the general public, that domineering body which makes or condemns all enterprises, from governments to mouse traps and it was inevitable that the Sisters should erect a modern hospital as the old building became more and more inadequate. In 1903 the second Halifax Infirmary, adjoining the first, opened its doors and within a few months was filled to capacity. For thirty years it served the people of Halifax and Nova Scotia, but long before its last days the cry for more room was again being heard.

It was in answer to this cry that the beautiful new Halifax Infirmary, the third, rose its six massive storeys in the air in 1933. Pronounced by hospital authorities as the "perfect hospital", the dream of physician, surgeon and obstetrician, it is a fitting workshop for the Sisters who control its destiny. From the humble volunteers who went to McNab's Island in 1866, nurses by nature alone, has grown a staff of trained women, equipped by their own school and by post-graduate work to carry on the highest traditions in nursing and its many ramifications through dietetics, pathology, pharmacology and roentgenology.

Training alone is but a little part. It is a process of molding, a giving of direction to that urge which has inspired the Sisters of Charity since the days of Sister Mary Vincent and her cohorts, years ago. Their creed, you may see, in pictorial form in the entrance hall of the Infirmary. It is a beautiful painting of Christ and the dropsical man, His answer to the questioning Pharisees, "But He taking him, healed him, and sent him away."

CASE REPORTS

GENERALIZED PERITONITIS DUE TO SUPPURATIVE APPENDICITIS.

Master O. Age 12. Single. School.

Complaints. Pain in abdomen—pain in end of penis after micturition—pain on defecation.

Personal History. Born and has always lived in N. S. No cough, loss of weight, night sweats, loss of appetite or of strength—bowels regular, no gastric distress. No breathlessness, no swelling of hands or feet. No frequency, dysuria or polyuria. No subjective symptoms referred to eyes, ears, nose, locomotion or orientation.

Family History. Mother, father, brothers and sisters are well. One brother just recovered from an attack apparently similar in onset to the attack of this patient.

Past History. Never sick—no accidents or operations.

Present Illnesses. On Sunday, October 29, 1933, for no apparent reason, pain came in the "Stomach." The pain was not severe and the patient slept that night. On Monday the patient arose although the pain was more severe and of a dull aching nature. He vomited several times during the day. On Tuesday although the diet was restricted to fluid the ache persisted. On Wednesday abdominal pain on defecation was severe enough to cause patient to scream—after the movement there was relief. On Thursday defecation again caused pain followed by relief and there appeared a severe pain in the tip of the penis after micturition. The abdominal pain until this time was described as being in the stomach, dull aching in character and exacerbated by defecation. A hearty supper—meat and potatoes—was eaten Thursday evening. On Friday severe pain in tip of penis after micturition—defecation caused acute abdominal pain—the stomach ache became severe—moved to the lower right abdomen and back again to Epigastrium—then became more or less generalized and occurred in spasms causing the patient to toss from side to side. The patient vomited, the first time since Monday. A doctor was called and hospitalization advised Friday, November 3, 1933.

The patient was a well nourished healthy boy of about twelve years—stricken with an acute illness. The face was pale and drawn under a delicate superficial flush of the malar regions. Jaundice, cyanosis, and dropsy were absent. There were no glandular enlargements. The patient in complete extension rested quietly on his back. Temperature 101.8°F., pulse 126, respirations 24. The tongue was coated and dry. Teeth, gums and fauces appeared normal and healthy. Respiratory movement in the abdomen was restricted. The abdomen was generally tender and resistant, both tenderness and resistance more marked in the lower half in the mid-line. No masses felt in relation to the stomach. Tenderness could not be elicited by rectal examination. Neither the liver nor spleen could be determined as enlarged. The gall-bladder could not be palpated. Loin pain and tenderness were absent. The subcutaneous rings were normal. The heart was not enlarged—

no murmurs were heard—no thrills felt—the rate was rapid, 126, the rhythm regular—force good. The pulse (radial) was 126, regular and of good volume and tension. Respiratory movement in thorax was slightly restricted. The slightly shallow respirations were 24 and regular. Vocal fremitus was normal—percussion did not show any abnormal dullness breath sounds were vesicular—vocal resonance normal. Rales and rhonci were absent. Eyes were wide but equal reacting to light and accommodation. Knee jerks were present equal and active. Plantar flexion response. Skin normal and health.

Leucocytes 11,600.

Urine Sp. G. 1,020.

Pale yellow.

Acid reaction.

Sugar, negative.

Acetone, negative.

Diacetic, negative.

Albumen, negative.

Micro. Crystals, negative.

Casts, negative.

Res., negative.

Blood, negative.

Operation. The abdomen was opened by sub-umbilical right rectus paramedian incision. The anterior fascia of the rectus was split vertically and the fascia separated from the muscle medially, the rectus muscle intact being retracted *laterally*. On opening the peritoneum a thin yellowish fluid poured forth, the remainder was removed by suction. The omentum was much thickened by an organizing lymphatic exudate. The thickened omentum formed a definite but leaking abscess wall about the appendix. Faecoliths were found free in the abdominal cavity. The appendix and thickened mesentery were secured, tied and cut. The stump of the appendix was treated with carbolic and with alcohol. Two cigarette drains were inserted, one to the stump and one to the pelvis. The peritoneum was closed with number two chromic catgut doubled. Tension sutures of silk worm gut were placed through the skin and anterior fascia of the rectus but superficial to the muscle. Vaseline gauze was used to pack the incision. The gauze rested on the peritoneum deep to the rectus muscle, displacing it laterally and filling the wound. The tension sutures were then tied—making these sutures entirely superficial to the vaselined gauze. The sutures were used to support the peritoneum and not to close the wound.

The temperature fell from 101.8°F. on admission, to 100°F. within twelve hours of operation. The cigarette drains were removed on the fourth day. On the morning of the seventh day the temperature was 98.8°F. The vaselined gauze and sutures were removed on the seventh day. The temperature remained at 98.4—99°F. from the seventh until the morning of the twelfth day when it reached 100.6°F. Note in this connection that on the eleventh day the edges of the wound were approximated by adhesive strapping, this strapping was removed as soon as the temperature rose to 100.6°F., i.e. the twelfth day. On the thirteenth day the temperature fell to 97.8°F. and did not again rise above 99°F. The patient was discharged on the eighteenth day.

The pulse, 126 on admission, fell gradually with only slight variations to 80 on the seventh day. Coincident with the rise of temperature on the twelfth day the pulse became 100, falling with the temperature of that day, to 80 where it remained.

The respirations, 24 on admission, were 25 on the third day where they remained until the sixth day when they dropped to 20 and remained there.

This method of dealing with a septic abdomen seems to have decided advantages. When the vaselined gauze was removed it allowed the laterally displaced rectus muscle to fall toward the mid-line. There was not any wound infection, hence no septic factor from that source. The area healed by granulation, so that to-day after four and a half months, the scar is no greater than one-half inch at the widest point—is solid and the wall strong. In so many similar cases closed in the ordinary way there is wound infection sepsis, slough, septic factors and extensive areas of granulation. It is considered more than mere coincidence that the temperature rose when the wound edges were approximated by adhesive, upon the release of which the temperature immediately fell. This method presents the following factors for consideration.

The drainage is adequate.

The peritoneum is given every aid in carrying on its unique defensive work.

The possibility of wound infection is minimized.

The amount of healing necessary is not so extensive as when the abdomen is closed in the usual manner—the wounds so often later breaking down, suppurating and sloughing. In any case the gauze packed wound can give no worse and possibly much better results than the ordinary methods.

J. W. REID, M.D., M.R.C.P. and J. V. GRAHAM, M.D.

Gastric Anacidity.

The patient was admitted to the Infirmary in August, 1931 for a few days' observation. The complaints were—gastric distress immediately after eating, eructations of gas from stomach, bad taste in the mouth, palpitation, nervousness and sleeplessness.

The family and personal history are good.

Examination showed a well nourished and healthy though anxious looking man, aged 60. All systems were negative to physical examination except for the presence of several badly abscessed teeth and very unhealthy looking gums.

Special investigation. The Kahn test and the blood picture were normal.

A complete gastro-intestinal X-ray examination showed no deviation from the normal.

The fractional gastric analysis was as follows:

Time	Free Hcl.	Total Acidity	Mucus	Blood
A.C.	0	5	++	Trace
15	0	5	+	0
30	0	10	+	0
45	0	10	+	0
60	0	10	+	0
75	0	9	+	0
90	0	9	+	0

The A.C. residue (11cc.) is mostly mucus and has a very offensive odor.

Diagnosis. Gastric Anacidity with an infection in mouth.

Treatment. A careful diet, low in protein (from Rehfuß's diet lists) was immediately started together with dilute HC₁, twenty drops with meals.

He was referred to his dentist for thorough treatment of the mouth condition. No other treatment except symptomatic care was employed.

Progress of Case. No very marked improvement was seen in the first three months, but at six months improvement was definitely present. A check-up at this point showed that the stomach was now secreting free HC₁—though not in normal amounts. Two years after the examination in hospital, his condition was apparently normal and has remained so since.

Comment. Gastric Anacidity, probably caused by focal infection, with gradual recovery following removal of infection.

J. W. MACINTOSH, M.D.

Hodgkins' Disease.

The patient was admitted to the Infirmary September 7, 1933, complaining of loss of weight and strength, profuse sweating, malaise, loss of appetite.

Family and Personal History. Patient is a young man, 26 years old, who always enjoyed good health. The family history is good.

Examination. Numerous enlarged and easily palpable lymph-glands were present in the neck, below the clavicles, in the axillae and in the groins. In the neck both anterior and posterior to the sterno-mastoids they formed glandular masses, while in other areas only discrete glands were found. A moderate, well defined splenomegaly was present.

All other systems were negative except that he was somewhat anaemic and underweight. The tonsils were absent and the teeth normal.

Special Investigation. Kahn—negative.

X-ray of Lungs. Lungs normal but enlarged glands seen in mediastinum projecting into root of left lung.

Blood Picture. HbO₂—76%; Erythrocytes—4,800,000; Leucocytes—20,800.

Differential count. Lymphocytes—5; Monos—4; Juveniles—9; Stab—1; Segmented—81. Total Neutrophiles—91. Eosinophiles—0. Basophiles—0.

"There is only a slight shift to the left—less than would be expected from an infection causing a leucocytosis of 20,000."

X-ray of teeth was negative.

The temperature record was of interest. For four days after entering hospital, there was an evening rise to 104° with morning recessions to near normal. This came down gradually by lysis until at the end of ten days it reached and remained normal.

Permission to section a gland was not obtained.

Diagnosis. Tentatively placed as Hodgkins' disease.

Treatment. Full course of X-ray to all areas, and to spleen. Fowler's solution in increasing doses.

Progress of Case. Rapid resolution of lymph glands, with clearing of all symptoms. Discharged after one month, at which time no glands whatever could be palpated, the mass in the mediastinum was gone and the spleen was apparently normal. Three months later no recurrence was in evidence and the patient had gained 20 lbs. in weight.

Comment. The unusual feature of this case was the rapid and complete resolution under X-ray therapy.

The differential diagnosis from Tuberculosis, Leukaemia and Lympho-Sarcoma would seem to be fairly well defined by the blood picture and the progress of the case.

The blood picture while not typical of Hodgkin's in general, is, according to the literature consulted, quite consistent with certain phases of the disease.

The high temperature may well be explained by the assumption that this case belonged to the Pel-Ebstein type and that further paroxysms of fever were prevented by the satisfactory response to the X-ray.

J. W. MACINTOSH, M.D.

Idiopathic Spontaneous Pneumothorax.

Until recent years spontaneous pneumothorax, a not uncommon accompaniment of pulmonary tuberculosis, was considered to be always tubercular in origin unless traumatic. It is now accepted by authorities that a small proportion of cases are not of tubercular origin and are truly idiopathic. Four such cases are reported in Britain in 1930. The following case is presented.

H. B. Student, age seventeen. First seen Oct. 29, 1931.

Family History. Negative for tuberculosis, etc.

Personal History. No serious illness of any kind. Four years before sustained a fracture of right femur while playing football.

Present Illness. About one half hour before seen by me, while walking leisurely up the street he was suddenly struck by what he described as, "a weak turn," when he felt as if he "were going to faint." After a few moments rest he continued to his home about a quarter mile distant. During this walk he began to feel a sense of constriction in his chest and became somewhat out of breath. I found him sitting up, pallid and anxious. Temperature 98.2°, Pulse 110, Respirations 26.

Physical examination. The apex beat was slightly shifted to the left. The right chest, where he now complained of some pain, was hyperresonant, and the movements of respiration perhaps somewhat limited. Breath and voice sounds were absent from the angles of ribs posteriorly to about the midclavicular line anteriorly in the right side. Under rest in bed and sedatives the patient readjusted himself to the new conditions and suffered neither distress in respiration nor pain. On Nov. 4th he was brought to the hospital and examined under the fluoroscope and by X-ray plates. This showed a two-thirds collapse of the right lung, but no evidence of old or active tuberculosis. On three occasions an intra dermal Von-Pirquet test was performed and was found negative.

In five weeks time the lung was apparently completely re-expanded clinically and since that time patient has led a normal and active life with no recurrence of symptoms or of tuberculosis.

A. EDWARD MURRAY, M.D.

Streptococcal Pyaemia.

C. Male, age 36. Blacksmith, married. Admitted to hospital 24th of January, 1934.

Complaints. Swelling on left side of neck: sore throat; general feeling of ill-health.

Personal history, negative. *Family history*, negative.

Past illness. Patient does not recall ever being sick. He has had no accidents or operations.

Present illness. During week of January 7th, although working hard, the patient did not feel very well. On January 14th he felt miserable with sore throat. On January 15th the malaise increased, his throat was still sore, and he developed a swelling on the left side of the neck. He went to work, but did not stay. He remained at home until January 24th when he came to hospital complaining of marked pain and swelling of the left side of the neck, sore throat and general malaise.

Physical examination. A non-nervous toxic patient resting quietly. Temperature 104.8°F. Pulse 92. Respirations 24. B. P. 138-88. *Nutrition*, good. *Ears*, hearing good, no discharge. *Nose*, no nasal discharge or obstruction. *Pupils*, reacted to light and accommodation. *Mouth*, upper teeth extracted. Lower anteriors present and in fair condition. *Tongue*, moist and clean. *Fauces and pharynx*, both tonsils present, reddened and injected. *Chest*, moved freely on respiration. V. F. normal. No abnormal dullness. Breath sounds vesicular. No rales or rhonchi. *Heart*, apex 5 L. intercostal 10 c. m. from midsternal line. No murmurs heard. No thrills felt. The quality of the sounds was good. *Pulse* 92, rhythm, regular; force normal. The radial pulses corresponded. *Abdomen*. No limitation of movements, soft. No masses felt in relation to stomach. Neither spleen nor liver was enlarged. Kidneys not palpable. No abdominal or loin tenderness. No evidence of healed or active lesions of the external genitalia. The limbs showed nothing abnormal. Knee jerks present and active. Plantar flexion response. Patient correctly orientated. No areas of anaesthesia or hyperaesthesia.

Local examination. Swelling antero-lateral aspect of the neck on left side. The swelling appeared to be anterior to the sternomastoid muscle extending superiorly upward over the angle of the mandible to the zygomatic arch, the anterior limitation being from this point extending inferiorly to a point midway between the angle and the symphysis, from there to the level of the cricoid cartilage, and from thence postero-inferiorly to the anterior border of the antero-mastoid muscle. The swelling was elastic; fluctuation was detected.

Diagnosis, localized abscess. Hot boric compresses were applied for twelve hours. At the end of this time the abscess was opened, and a large quantity of pus evacuated. Eight hours after opening the abscess T. 106°F, P. 100, R. 22; four hours later, T. 102°F., P. 100, R. 24.

January 26th, 1934.

Urinalysis—negative.

Kahn, negative.

Leucocytes..... 9,800

Eosinophiles..... 0

Basophiles..... 0

Myelocytes..... 0

Juveniles..... 38

Stabs..... 17

Segmented.... 35

Lymphocytes. 6

Monocytes... 3

} Neutrophiles 90

Examination of pus from the abscess revealed streptococcus haemolyticus. Blood was taken for culture. The diagnosis at this period was a generalized blood stream infection.

Temperature 106.8°F., Pulse 124, R. 28. (Chill). Four hours later T. 101°F., P. 98, R. 25. At this time, the evening of January 26th, 50 cc. Mulford's Antistreptococcic Serum was given intravenously. Within four hours there was a decided improvement, T. 97°F., P. 78, R. 22. After ten hours the general condition was worse. T. 105.4°F., P. 108, R. 22. Fifty c.c. of the same type of serum was given intravenously twelve hours after the first dose. There seemed to be some direct benefit.

On January 28th blood culture showed streptococcus haemolyticus.

On February 1st, 1934:

Leucocytes.....	21,900	Stabs.....	1
Basophiles.....	0	Segmented.....	70
Eosinophiles.....	0	Lymphocytes.....	12
Myelocytes.....	0	Monocytes.....	9
Juveniles.....	8		

On February 4th the abscess was draining freely, limbs were very painful, voiding, was taking fluids well, bowels regulated by enemas, T. 104°F., P. 100, R. 30. At this time 50 c.c. Mulford's Antistreptococcic Serum was given intravenously, within ten minutes of which T. 95.8°F., P. 74, R. 20 (anaphylaxis), but within eight hours T. 102.2°F., P. 94, R. 24. His condition remained unchanged for six days (February 4th to 10th).

Note. From February 6th to 13th inclusive 25 c.c. of Serum were given each day intramuscularly.

February 9th, 1934:

Leucocytes.....	12,000	Segmented.....	70
Monocytes.....	4.5	Eosinophiles.....	1
Juveniles.....	7	Basophiles.....	1.5
Stabs.....	1.5		

Acute infection, but probably not now generalized in the blood stream.

February 10th, 1934, temperature normal.

From February 19th to March 27th. At 4 a. m. Temperature 97.6°F.—98.6°F., and remains well down until 12 noon, when it begins to ascend reaching 101°F.—103°F., by eight o'clock in the evening, gradually falling until 4 a. m. This is almost constant. Pulse varies from 86-96; respiration 20-25.

February 19th, 1934:

Leucocytes.....	27,200	Stabs.....	3
Eosinophiles.....	1	Segmented.....	71
Basophiles.....	0	Lymphocytes.....	8
Myelocytes.....	0	Monocytes.....	3
Juveniles.....	14		

February 19th, 1934. Incision over swelling on the right elbow posteriorly, subcutaneous abscess, large amount of pus evacuated.

From February 19th to March 8th, eleven subcutaneous abscesses were opened, chiefly on the limbs. On March 25th, abscess on upper anterior aspect of right thigh opened into—deep to the superficial muscles—immediate evacuation of pus sixteen ounces. On March 27th, abscess opened on left arm by incision along the medial aspect of the deltoid muscle. Ten of the incisions have healed. The abscesses opened, one on March 8th and one on March 25th and one on March 27th, are still draining. On March 10th

and 11th it was necessary to catheterize the patient on three occasions—voided naturally until March 24th when it became difficult, but was finally accomplished. The urine shows many pus cells.

March 24th.

Leucocytes.....	27,500	Stabs.....	2
Lymphocytes.....	18	Segmented.....	67
Monocytes.....	5	Eosinophiles.....	1
Juveniles.....	7	Basophiles.....	0

There is little room for doubt that we were dealing with a septicaemia. It is believed that there is no longer a septicaemia. The administration of antistreptococcic serum appears to have been of direct benefit in this case. Had serum been administered earlier and over a longer period we feel better results would have been obtained. No case of streptococcal septicaemia can be considered as treated unless antistreptococcic serum has been used early—in large doses—often—and over a considerable period of time.

F. R. LITTLE, M.D.

Acute Appendicitis in a Child Two Years of Age.

The only complaint in this case was general stomach ache. There was no vomiting, the temperature was 101°F., pulse rate 130, respirations 26, and the urine negative. The previous history was irrelevant.

Operation. A right rectus incision was made. There was much free fluid in the abdominal cavity, and the appendix, measuring 4" in length, was gangrenous from tip to base. The appendix was removed and the abdomen closed in the usual manner; two large cigarette drains were left in.

This case is mentioned to show that appendicitis can be seen in a child of two years. No leucocyte count was done, as it was felt that the child was too young for the count to be of any value.

F. R. LITTLE, M.D.

Three Cases of Granuloma Pudendum.

This I think, is a more or less rare condition in Canada, and to say the least is at times hard to diagnose. The three cases I have seen were in adult males between twenty and thirty years of age. It resembles in some ways the ulcer of Syphilis and it also looks something like the ordinary Chancroid. Two of the cases in fact had been treated previously for Syphilis. The Kahn and Wasserman tests in all three were negative.

The first case I had was the most severe. The Corpus Spongiosum and Cavernosa being two-thirds destroyed. This case had been treated for eight weeks with Silver Nitrate applications then Bi-chloride and at last the actual cautery had been used. As was to be expected the organ was then pretty well destroyed. A solution of Tartar Emetic was then given intravenously 5 c.c. at a time. The injections being given every three days increasing 1 c.c. each time. The first case was cured with eight such injections with a maximum dose of 10 c.c. The other two cases were treated immediately with Tartar Emetic and were cured with six injections.

I mention these cases so that if any of my fellow practitioners should get a case that doesn't respond to the treatment given for Chancroid and Syphilis then they should at least give Tartar Emetic 5 c.c. intravenously a trial. I feel they will be pleased with the results.

F. R. LITTLE, M.D.

Undulant Fever.

The attention of physicians and health officers has recently been directed to the problem presented by the recognition of an apparently new disease—undulant fever—due to the *Brucella Melitensis*, variety *Abortus*. That this infection undoubtedly occurred in the past, though the true nature of it was not suspected, increases the interest in the problem.

From a review of over 200 case reports one notes that the average duration of illness was from 3 to 4 months although some cases continue for as long as 12 to 18 months. The striking feature was the prolonged period of disability after the subsidence of the fever. This was much more than one would expect following an illness in which there were few acute symptoms. Recurrence was probably the next most striking feature.

A series of three cases treated by the use of anti-serum all of which showed rapid improvement with early return to work and no recurrence of symptoms seems justification for a report.

Case 1. G. McL. Student aged 22 yrs.

Complaints. Weakness, "fever", chills, fatigue, and lack of energy. Symptoms getting worse for the past two weeks and became specially marked during football practice. Weakness increased and though he felt well in the morning, it became more marked throughout the day. This was accompanied by a feeling of chilliness which also became more marked towards evening. At times this latter symptom became so intense that it was necessary to put on extra clothing even on very warm days. Appetite was impaired. Bowels previously regular now severely constipated. There was a slight non-productive hacking cough. For one week past has had profuse night sweats occurring shortly after midnight. The temperature was found to be remitting—normal or about normal in the morning and 103 to 104.5 in the evening. When lying in bed the patient looked well except for a slight paleness.

Physical examination was negative except for slight reddening of the throat, slight tenderness over the spleen and even less marked tenderness across the lower abdomen. B. P. 90/42; Erythrocytes 4,150,000; Leucocytes 4200; Hb 90%; Small monos 35; Large monos 2; Neutrophiles 63; Eosinophiles 1; Basophiles 1.

Urinalysis—Negative. Urine culture—Negative. Stool culture—Negative.

Blood culture negative after 4 days, but incubation was continued with semi-weekly subculture and *Brucella abortus* was reported at the end of 18 days.

Blood serum showed specific agglutination in the titre of 1: 500.

Under supportive treatment and specific treatment with anti-serum, patient was discharged from hospital 22 days after admission, temperature having been normal for 6 days. 3 weeks later went to work with no undue lassitude and no evidence of recurrence.

Case 2. Similar to case 1, but the original complaint was swollen and painful testis suggesting epididymitis.

Case 3. Similar to the previous case except that an early and prominent complaint was abdominal pain and sweating was less marked.

Undulant fever usually presents a problem because it is not always considered in differential diagnosis. This condition is an infection without a pathognomonic symptom or sign. Moreover patients rarely appear dangerously ill; hence the taking of a detailed history and the performance of a complete physical examination are often neglected. Clinically it can be quite accurately diagnosed when one has once seen a case or has become familiar with the clinical characteristics of the disease.

The clinical manifestations can be briefly tabulated as follows:

Onset— Usually gradual.

Symptoms— Weakness.
Sweating.
Chilliness.
Rigors.

P { General aching.
a { Headache.
i { Backache.
n { In the joints and back of neck.
abdominal.

G { Ansrexia.
I { constipation.
Insomnia.
Nervousness.
Cough.

Signs— Fever.
Loss of weight.
Palpable spleen.
Abdominal tenderness.

Laboratory aids— Blood agglutination test.
Blood culture.
Leucopaenia.

J. W. MERRITT, M. D.

Report on Tissues sent for examination to the Pathological Laboratory, from March 1st, 1934 to April 1st, 1934.

The number of tissues sectioned is 165. In addition to this, 30 tissues from 6 autopsies were sectioned, making 195 tissues in all.

Tumours, malignant	36
Tumours, simple	16
Tumours, suspicious	1
Other conditions	112
Tumours, pre-cancerous
Tissues from 6 autopsies.....	30—195

The Nova Scotia Medical Bulletin

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VOL. XIII.

APRIL, 1934

No. 4

WITH this issue of the BULLETIN, the Halifax Infirmary is at home to the doctors of Nova Scotia. It is no strained greeting this fine old Lady of Charity extends to her guests. Many of them are old friends, tried and true, workers within her walls; some, yet to enter the field of practice, are seeking the instruction and encouragement her wise tolerance and kindly scrutiny have ever offered the young doctor of high ideals and ambitions; while others, distant from her immediate constituency, are received with quiet sincere recognition, a fellow feeling of co-operation toward a common ideal. It is this sentiment which, without ostentation or highly colored phrase, knits the hospital and our profession together and brings gratitude to our hearts for those who have given up all other things that this way of service may be kept open to the disease afflicted of our people.

The Infirmary is, with one exception, the oldest hospital in our province. It is old only in years; in service it is young and vigorous. An institution in which ever developing science is moulded and applied to the cure and prevention of disease, must keep going forward. Through the years of its service comes its background, its inspiration, maybe its soul. These are the intangible things that engender the gift of faith and keep our ideals from trailing in the mire. Faith, however, must be fed with good works or it perishes. The good works in a hospital consists in providing the best facilities, both human and material, for controlling and curing disease. Hence it must keep up to modern requirements.

The Infirmary has always done this. It has done so without complaint and without envy for others more favourably financed. It receives no government or municipal aid. Its charities are not recorded in provincial blue books, but they are not the less real for this omission. The Sisters spare nothing to maintain the highest standard of hospital service. Their present magnificent new hospital is a striking memorial to their courage and to their economic and business capacity.

The BULLETIN, speaking for the doctors of the province, offers congratulations to the Sisters of Charity and wish them godspeed.

G. H. M.

A WAY OF ART.

A popular columnist, touching recently on the medical profession, infers that the fixing of broken bones and lacerated ligaments—in a word, repair of the human body—does not tally with those finer conceptions of beauty which reach beyond this "barren footstool" and give life a meaning and thought a habitation. Whether the inference is warranted by his experience or not, it is the average belief that the practice of medicine and surgery tends to roughen the sensibilities and to give warrant for the statement, expressed long ago, that a bloody Moloch sits in the chair of Medicine. Nothing could be further from the truth. That a doctor should write poetry or weave his conceptions of the beautiful into a romantic tale is not out of keeping with anything his professional work entails; although it may be quite true that the stress and worry of medical practice leave little time for courting, as Goldsmith said, "the draigle tailed Muses."

In the long history of medicine one finds doctors attaining great prominence in other arts than their own. The gospels of St. Luke bear clear internal evidence that their author was a physician. The background of a medically trained mind is oft reflected in the poetry and other literary productions of the doctor. Goldsmith is a good exception but then he was never serious about medicine. Oliver Wednell Holmes, both in his poetry and his prose, is full of medical thoughts. A professor of anatomy, he found inspiration enough in the beauty and function of the human body to compose his "Living Temple", and from his biological knowledge came that supreme clairvoyance which gave us one of the fine poems of the English language and easily his own best effort, the "Chambered Nautilus."

The terror which popular tradition associated with the art and science of surgery passed long ago with the discovery and application of anaesthesia and asepsis. "The gush of blood and the screams of the patient," the words of an old surgical writer, have no meaning in the modern operating room. On the contrary, the whole routine of an operation to-day has much in it of real beauty and partakes, as Sir Berkeley Moynihan says, of the nature of a sacrament. The high priest of the function is entering the most highly wrought and most beautiful of all created temples, the home of the immortal spirit, and it is proper that he does so with reverence and with a mind which can span the material and the eternal verities.

Is not the repair man then, in this human sanctuary, touching the thin film which lies between design and the Designer? Is there not matter here for that mental exaltation without which there is no poetry and no romance? Need the soul seek out another stairway in order to reach the stars? If doctors write rarely it should not be for want of inspiration.

G. H. M.

The Annual Meeting

YARMOUTH

JULY 4th and 5th, 1934

ON Wednesday and Thursday, July 4th and 5th, the annual convention of our Society will take place at Yarmouth, Nova Scotia. It is hoped that every member will make a special effort to attend this convention. A very fine programme—social, business and scientific—has been arranged and we feel that those who come will not be disappointed.

Among the outstanding physicians who have accepted our invitation to attend and will contribute papers are: George W. Crile, Cleveland; Elliott P. Jocelyn, Boston; Frank H. Lahey, Boston; Gilbert Horrax, Boston; H. M. Clute, Boston.

Local papers will be given as well by Dr. M. J. Carney, Halifax; and Dr. L. R. Meech, North Sydney.

There are two splendid Hotels in Yarmouth, the Grand Hotel and the Lakeside Inn, so that ample accommodation at very reasonable rates can be assured. There is perhaps no town in Nova Scotia of its size, as well equipped to take care of a convention of this kind as Yarmouth. It is the terminus of two railroads and five trains are arriving daily from Halifax.

For those who do not take part in the golf tournament, an outdoor picnic has been arranged and a very interesting drive in which the beauties of the Western Gateway may be enjoyed. There will be boat racing, too, for those who wish to compete on the Milo Lakes—and bridge and teas for the ladies.

At the banquet and dance in the evening the Lieutenant-Governor and his wife, together with the Premier and Mrs. MacDonald and The Hon. F. R. Davis, Minister of Health and Mrs. Davis, have graciously accepted our invitation to be present. We feel that every member should make a special effort to attend.

You will be advised in the next issue of the BULLETIN with whom to communicate for special reservations.

Department of the Public Health

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Those physicians wishing to make use of the free diagnostic services offered by the Public Health Laboratory, will please address material to Dr. D. J. MacKenzie, Public Health Laboratory, Pathological Institute, Morris Street, Halifax. This free service has reference to the examination of such specimens as will assist in the diagnosis and control of communicable diseases; including Kahn test, Widal test, blood culture, cerebro spinal fluid, gonococci and sputa smears, bacteriological examination of pleural fluid, urine and faeces for tubercle or typhoid, water and milk analysis.

In connection with Cancer Control, tumor tissues are examined free. These should be addressed to Dr. R. P. Smith, Pathological Institute, Morris Street, Halifax.

All orders for Vaccines and sera are to be sent to the Department of the Public Health, Metropole Building, Halifax.

Communicable Diseases Reported by the Medical Health Officers for the month of March, 1934.

County	Cer-Spi. Meningitis	Chicken Pox	Diphtheria	Influenza	German Measles	Undulant Fever	Paratyphoid	Pneumonia	Scarlet Fever	Mumps	Tbc. Pulmonary	Tbc. other forms	V. D. G.	V. D. S.	Whooping Cough	Goitre	Pink Eye	Erysipelas	TOTAL
Annapolis...																			
Antigonish...																			
Cape Breton...		2		4				3	1		2	1	1	2	27				43
Colchester...				43	2			2	2				2				48		99
Cumberland...				25		1			25	3			8	11					73
Digby.....								2											2
Guysboro.....				4															4
Halifax City...			3						10		1				11			1	26
Halifax.....																			
Hants.....									1										1
Inverness.....		4		4				3					3						14
Kings.....				22				1		3							5		31
Lunenburg.....								1	1										2
Pictou.....				6	4			1	2										13
Queens.....																			
Richmond.....				2															2
Shelburne.....				16	1			10			1		5						33
Victoria.....																			
Yarmouth...	1	1		4			1	7	1		2		3	1	13	1			35
TOTAL.....	1	7	3	130	7	1	1	30	43	6	6	1	22	14	51	1	53	1	378

RETURNS VITAL STATISTICS FOR FEBRUARY, 1934.

County	Births		Marriages	Deaths		Stillbirths
	M	F		M	F	
Annapolis.....	9	11	7	6	6	3
Antigonish.....	3	9	5	9	8	2
Cape Breton.....	109	85	41	41	43	4
Colchester.....	27	22	8	12	23	4
Cumberland.....	46	27	30	29	11	4
Digby.....	13	11	3	14	10	3
Guysboro.....	24	13	1	8	10	0
Halifax.....	93	103	58	69	62	7
Hants.....	14	19	5	8	12	0
Inverness.....	13	15	11	5	11	1
Kings.....	24	19	12	4	3	0
Lunenburg.....	37	22	7	27	16	5
Pictou.....	36	24	11	23	22	2
Queens.....	17	13	5	5	6	0
Richmond.....	12	5	3	4	3	0
Shelburne.....	13	15	4	10	9	3
Victoria.....	5	5	2	6	4	0
Yarmouth.....	24	11	4	17	19	1
TOTAL.....	519	429	217	297	278	39

LABORATORY

LABORATORY EXAMINATIONS: Their indications, method, and interpretation with special reference to the requirements of the general practitioner.

By RALPH P. SMITH, M.D., D.P.H., Provincial Pathological Laboratory,
Halifax, N. S.

Colour Index:

This is the index most frequently used in the diagnosis of blood disease.

The colour index is:— Haemoglobin percentage
Red Cell Count percentage of 5 million.

It can be most readily estimated by dividing twice the first two figures of the red cell count into the haemoglobin percentage. A very low haemoglobin with the red cell count not decreased in the same proportion gives a colour index less than 1 and indicates a secondary or chlorotic anaemia. When the haemoglobin is not decreased to the same extent as the red cell count the colour index is greater than one and a primary pernicious anaemia may be suspected. Intestinal parasites may give a similar picture and any eosinophilia of the blood should be noted and the stool examined for ova. One should also keep in mind the possibility of x-ray or benzol poisoning which may produce an aplastic anaemia not unlike some types of Addison's anaemia.

The Icterus Index: A Quantitative Estimation of the Colour of the Blood Serum.

Principle of Test:—Blood is allowed to clot and the clear serum compared with standards to record the depth of its colour which depends on bile pigments.

Precautions:—(1) Haemolysis—All apparatus coming in contact with the blood should be clean and 'dry'. Water or chemicals will cause haemolysis of the cells and readings cannot be made.

2. Cloudy Serum—During digestion and food absorption the serum is cloudy and this greatly interferes with the test. The blood should be taken before breakfast or five hours after a meal, when the serum is clear. The estimation should be made within twenty-four hours.

The Test:—Obtain 5 cc. of blood from a vein in the arm. Let it stand in a clean dry test-tube until the clot contracts. An hour or two at body temperature will be sufficient but a longer time is required at room temperature. Centrifuge at a high speed for five minutes to pack the clot in the bottom of

the tube. Without disturbing the clot pipette—off 2 or 3 c.c. of clear serum. A hypodermic syringe with a long needle is useful for this. Compare the serum with a 1 in 10,000 potassium dichromate solution which represents an icterus index of 1.

For those not having a colorimeter, results satisfactory for clinical purposes may be obtained by test-tubes. Use two test-tubes about $\frac{3}{4}$ by 6 inches. They must be of equal size. Into one place about 10 c.c. of 1 in 10,000 potassium dichromate standard solution and into the other place exactly 2 c.c. of the clear serum. Face the light and hold a sheet of thin paper behind the tubes. To the serum add measured amounts from a graduated pipette of 0.9 sodium chloride solution until the colour is similar to the one of the standard. The icterus index is the cubic centimeters of serum originally in the tube divided into the total of serum and saline required to make it the same colour as the standard.

Example:—If to the 2 c.c. of serum 13 c.c. of saline have to be added to make the colour similar to the standard 2 divided into 2 plus 13 equals 7.5 which is the icterus index. If only 1 c.c. of serum is available the calculation would be 1 divided into 1 plus 7 (cubic centimeters of saline added) equals 8 which is the icterus index. If the icterus index is very high it is best to make a preliminary dilution of 1 in 10, using normal saline as diluent and multiply the result obtained by 10.

For those making frequent clinical estimations the LaMotte Pigford Icterus index comparatory is useful and inexpensive.

The blood serum is obtained in the usual way, placed in a test-tube of equal diameter to standards and a comparison made behind a ground-glass window in the cover of the apparatus. It is necessary to have the serum entirely free from turbidity. If the icterus index is very high the serum may be diluted 2 or 3 times with saline. The tube that contains the serum has graduations for dilution purposes.

Practical Interpretation of the Icterus Index:

1. Normal 4 to 6.
2. Latent icterus 6 to 18.
3. Bile in the urine and jaundice at 18 and up.
4. Secondary anaemia 2 to 4.

Haemolytic States:

5. Pernicious anaemia 6 to 20.
6. Pneumonia and septic infections 4 to 15 (above 10 in fatal cases).
7. Chronic decompensated cardiovascular disease 4 to 15.
(Above 6 in passive congestion of the liver).

Disease of Biliary System:

8. Cholelithiasis 4 to 6.
9. Cholecystitis 7 to 15.
10. Occlusion and cholangitis of the common bile duct 30 to 150.

Other Diseases:

Gastric ulcer, rheumatic fever, syphilis, tuberculosis 4 to 6, Duodenal ulcer 7 to 14. Diabetes 7 to 15. Carotinemia (from eating carrots) 6 to 15.

The icterus Index test has now largely replaced the more intricate Quantitative Van den Bergh Reaction in which clear serum is treated with Ehrlich's diazo reagent. The presence of bile in the urine is probably as accurate an indicator in obstructive jaundice, as it is probably true that the Type I (haemolytic bilirubin) is never excreted in the urine. Thus when bile occurs in the urine there is some obstructive element of jaundice present clinically.

Blood Sugar, Urea nitrogen, Uric acid, Creatinine estimations:—the blood should be well mixed with oxalate within two minutes from the time it comes from the vein. Gentle shaking is necessary. The blood for single examinations should be taken before breakfast.

Preservation:—After one-half hour at room temperature the sugar content of the blood will begin to diminish. Even in an ice-chest where the glycolysis is less than at room temperature there may be 7 mgm. loss in two hours and 20 mgm. in four hours. The best preservative is sodium fluoride. Ten to 20 mgm. per c.c. of blood will preserve the sugar content for 10 days at room temperature. One hundred milligrams of the powder should be placed in the tube for 5 c.c. of blood. Shake the tube immediately after the blood is withdrawn, otherwise it will clot. As sodium fluoride only dissolves to 4 per cent it cannot be used in solution as is potassium oxalate; Oxalate is unnecessary with sodium fluoride which is an anticoagulant as well as a preservative. Fluoride is a satisfactory preservative for the non-protein nitrogen, uric acid, creatinine and cholesterol content of the blood. It is necessary to use special precautions in urea preservation, but the blood keeps for 8 hours.

Interpretation of Blood Urea:

The urea content of the blood is usually recorded as urea nitrogen, the nitrogen making up approximately one-half the urea. The readings are slightly higher after a meal rich in proteins and the optimum time to do the test is before breakfast.

The normal urea nitrogen is from 10 to 18 mgm. per 100 c.c. of blood although up to 20 does not definitely indicate impaired kidney function. It is a test of glomerular disease rather than tubular. It is low in the tubular degeneration known as nephrosis; also in eclampsia although it is elevated in the nephritis of pregnancy. In acute nephritis the urea nitrogen may go up to 100 for a period of a week and two weeks later may come back to normal as recovery takes place.

In Chronic Renal Disease:—All renal function tests are of most value in chronic disease and blood urea shows an increase only when the chronic disease is of the advanced type. The earliest impairment is shown by the water concentration test. While the water test may show a lack of concentrating power the kidney compensates for this by a relative polyuria and so excretes the necessary urea and other waste products. This state may continue for a long time. Only when the compensating polyuria fails does the blood urea increase.

Experimentally two-thirds of the working kidney substance which is the normal reserve may be removed without the blood urea increasing. When the last third becomes impaired, the blood urea nitrogen shows increased readings and the blood-pressure is usually up. Cardiac failure produces a

very abnormal result in the dye test or the water-dilution test. It has relatively little influence on the blood urea and water-concentration tests.

In chronic nephritis, according to Widal, a blood urea nitrogen of 25 to 50 indicates a serious prognosis but prolonged survival is possible. With 50 to 100 mgm. life rarely extends more than a year. With 100 to 150 mgm. life extends from a few weeks to a few months; with over 150 mgm. patients live not longer than a few days.

A reduction of the protein intake definitely aids in reducing the blood urea nitrogen retention.

In Genito-urinary Surgery:—A high blood urea nitrogen in prostatic or other urologic obstruction has not such a serious prognosis as in chronic nephritis. A patient with obstruction to the urinary outflow may have a blood urea nitrogen over 100 and not appear ill. When the obstruction is relieved blood urea nitrogen rapidly falls to normal if there is no chronic nephritis. The presence of urinary casts suggests nephritis. Patients having a blood urea nitrogen of over 30 mgm. should be regarded as unfavorable risks for an extensive surgical operation.

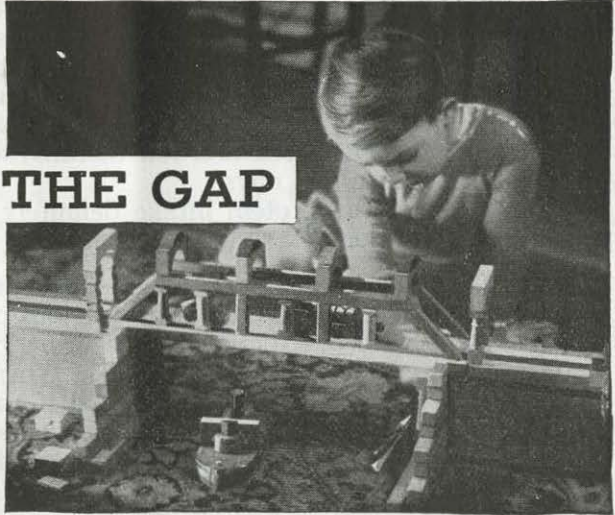
In Intestinal Obstruction and Dehydration:—In intestinal obstruction, whether of the mechanical or of the adynamic type that occurs in acute general peritonitis, the blood urea nitrogen is increased to four to five times its normal although the kidney function is good. This is due to increased tissue destruction and the depleted state of the body fluids do not allow active renal excretion. Where intestinal obstruction, general peritonitis, severe vomiting or diarrhoea is the cause of high blood urea, the urine is diminished and has a specific gravity over 1.030. Where renal disease is the cause of urea retention the urine specific gravity is below 1.025, usually 1.020 or less, and even the diuresis cannot compensate for the lack of concentrating power in the kidney. The specific gravity of the urine is an important means of distinguishing as to whether a high blood urea is due to intestinal upset or renal failure. As the classical symptoms and signs frequently do not appear until late in the course of the disease, a blood urea estimation is indicated where there is any suspicion of intestinal obstruction.

Determination of the Bleeding Time:—

The Test. Clean the lobe of the ear with alcohol and absorbent cotton and allow it to dry. Hold it firmly to the lower lobe of the ear, applying counter pressure behind the lobe and release the lancet blade. On infants it is best to use the side of the heel. At half-minute intervals blot up the blood with blotting paper, taking care not to touch the incision with the paper. Each blot represents half a minute's flow of blood and the decrease in the size of the drops is an index to the decrease in haemorrhage. The cut should be of such size that the first blot is $\frac{1}{2}$ inch in diameter. The total duration of the haemorrhage is called the bleeding time. Normal: two to five minutes.

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During pregnancy and lactation when increased demand for calcium* is frequently supplied from the mother's calcium depots—the bones and teeth,—“Calcium A” supplies an easily administered dietary supplement.

**B.M.J., Sept. 26, 1931*



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Pharmaceutical and Biological Chemists

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TORONTO

Personal Interest Notes

DR. and MRS. T. A. KIRKPATRICK of Kentville were called to Saint John on March 14th by the death of Mrs. Kirkpatrick's father, Mr. Ellis.

Dr. J. P. McGrath of Kentville Addresses Rotarians. Dr. J. P. McGrath was speaker at the regular weekly luncheon of the Kentville Rotary Club on March 12th, and told members and guests of his recent trip to New York, Montclare and Boston. G. C. McDougall presided and introduced the guests, Rotarian Lloyd Farquhar, Saint John, W. T. Kearney, Montreal, and Clifton Hiltz and Eric Kinsman, Kings County Academy. Dr. McGrath's talk on his trip to the United States was tinged with humor and included more than one reference to fellow club members. He made the trip by way of steamship from Halifax and returned from New York through Boston to Yarmouth and up the Valley. Personal observations of conditions in the city of New York convinced him that people there are suffering extreme financial hardships. We in this part of the continent, he said, do not realize how hard pressed they are for we have not experienced anything like they have across the border. Dr. McGrath paid a tribute to Dr. Hubert Lyons whom he visited in New York. Dr. Lyons, he said, has an enviable reputation in that city and is generally recognized as one of the leading practitioners there.

Dr. and Mrs. D. J. Hartigan of New Waterford left on Friday evening, March 16th for Rome on the pilgrimage directed by Rev. Ronald MacLean of Whitney Pier. They sailed from Halifax on the 17th. Dr. R. F. Nott of Toronto is supplying for Dr. Hartigan while he is away.

Dr. and Mrs. H. L. Scammell of Halifax left on March 30th for New York and will be absent for the next fortnight.

The BULLETIN extends congratulations to Dr. and Mrs. E. W. H. Cruickshank (nee Steventon) on the birth to them on March 21st, of a daughter. Dr. Cruickshank is Professor of Physiology at Dalhousie University.

Dr. M. A. Macaulay, Halifax, Administrator of Camp Hill Hospital, sailed on the Red Star liner "Pennland," March 20th, for New York, contemplating an absence of about a week.

Dr. J. E. Hett, of Toronto, has asked the Ontario Minister of Health and the Ontario Medical Association for an official investigation into his treatment of cancer, which he claims is a positive cure. For three years he had used a serum intravenously in many advanced cases and numbers of cancer patients are well. The Ontario Health Department announces that it is prepared to proceed with investigation.

Dr. C. Bruce Trites of Bridgewater sailed on March 20th on the steamer "Colborne" for Barbadoes, B. W. I., where he will remain for a brief holiday. Dr. Trites will return on the north bound trip of the same steamer, about six weeks hence.

Mrs. Hugh MacKinnon wife of Dr. Hugh MacKinnon of Berwick and little daughter, Elizabeth, recently visited Toronto, Brantford and Niagara Falls.

Drs. T. A. Lebbetter, L. M. Morton, A. R. Campbell and C. K. Fuller of Yarmouth have taken over a new suite of offices in the Majestic Theatre building. The new quarters are well appointed and lend themselves admirably to the use of the well-known physicians.

Two physicians have recently located in Truro: Dr. Hugh R. Peel, M.B., Ch.B., (Edin.), son of Mr. and Mrs. W. S. Peel, formerly of Truro, now of California, who is opening an office at 670 Prince Street, and William J. MacDonald, M.D., C.M., son of Conductor and Mrs. A. J. MacDonald, Arthur Street, who is opening at 12 Inglis Street. These two mediceos have had wide professional experience at home and abroad.

Dr. Clifford Thompson of Montreal has been appointed a member of the staff of the Royal Victoria Hospital in that city. Dr. Thompson is a son of Mr. and Mrs. W. S. Thompson of North Sydney. He has practiced his profession in Montreal with singular success for five years and is regarded as one of the leading members of his profession in Canada.

Dr. Daniel MacDonald gives interesting health talk. On Sunday, March 18th, Dr. Daniel MacDonald of North Sydney, gave a most interesting address on "Health" to the Holy Name Society. Dr. MacDonald traced the question of health down through the years from the early ages, citing numerous facts to show that the question of health and clean living is a very important one. He took the different phases of the question such as housing, clothing, food and cleanliness of one's body, and explained in detail what each one meant to the health of the family or the individual, stressing particularly the matter of housing. Local conditions on health matters were also referred to by the lecturer who said that in his opinion North Sydney compared very favourably with the most of towns or cities and in many cases excelled, especially as to water supply. He issued a warning of the danger of pollution of wells at this time of year on account of the melting snow and ice.

OBITUARY

The BULLETIN regrets to announce the death in England on March 12th of Mrs. Clarina Underhill Slayter, wife of the late Dr. W. B. Slayter, in his day one of the foremost physicians in Halifax. Mrs. Slayter had celebrated her ninetieth birthday on the 3rd of March. The funeral took place in Halifax on March 29th.

We extend our sympathy to Dr. Clyde W. Holland, Halifax, in the death of his father, Mr. Leonard T. Holland, which took place on Sunday, April 8th, following a severe attack of Influenza. Besides Dr. Holland there survive; his wife, Mary J. Holland, two daughters, the Misses Florence and Eleanor Holland and L. Gilbert Holland at present a medical student at Dalhousie.

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RETURNS BY MEMBERS OF THE MEDICAL PROFESSION.

As a matter of guidance to the medical profession and to bring about a greater uniformity in the data to be furnished to the Income Tax Division of the Department of National Revenue in the Annual Income Tax Returns to be filed, the following matters are set out:

INCOME

1. There should be maintained by the Doctor an accurate record of income received, both as fees from his profession and by way of investment income. The record should be clear and capable of being readily checked against the return filed. It may be maintained on cards or in books kept for the purpose.

EXPENSES

2. Under the heading of expenses the following accounts should be maintained and records kept available for checking purposes in support of charges made:

- (a) Medical, surgical and like supplies;
- (b) Office help, nurse, maid and bookkeeper; laundry and malpractice insurance premiums. (It is to be noted that the Income War Tax Act does not allow as a deduction a salary paid by a husband to a wife or vice versa. Such amount, if paid, is to be added back to the income).
- (c) Telephone expenses;
- (d) Assistant's fees: The names and addresses of the assistants to whom fees are paid should be furnished. This information is to be given this year on or before the 31st March, but on or before the last day of February in each subsequent year on Income Tax Form known as Form T-4, obtainable from the Inspector of Income Tax. (Do not confuse with the individual return of income, Form T. 1, to be filed on or before 30th April in each year);
- (e) Rentals paid: The name and address of the owner (preferably) or agent of the rented premises should be furnished. (See j);
- (f) Postage and stationery;
- (g) Depreciation on medical equipment: The following rates will be allowed provided the total depreciation already charged off has not already extinguished the asset value:—

for sick as well as normal babies

Dextri-Maltose, Carbohydrate of Choice

"As to the kind of extra carbohydrate to be added, whether lactose or maltose, I believe dextrimaltose to be better in general in cases of fat indigestion (infantile atrophy)."—C. H. Dunn: *The Hygienic and Medical Treatment of Children*, Southworth Co., Troy, New York, 1917, V. 1, p. 418.

In discussing the treatment of decomposition Feer says: "The period of repair may be shortened by giving suitable additional food; the best, probably, being buttermilk to which carefully regulated proportions of dextrin and maltose preparations or malt soup are added."—E. Feer: *Text-Book of Pediatrics*, J. B. Lippincott Co., Phila., 1922, p. 284.

In the treatment of infantile atrophy, Fischer recommends the following: "The carbohydrate should be increased by gradual addition of dextrimaltose.

"Malt soup or dextrimaltose (Mead's) should be added in teaspoonful or more doses to each feeding until the point of carbohydrate tolerance is reached."—L. Fischer: *Diseases of Infancy and Childhood*, F. A. Davis Co., Phila., 1925, V. 1, p. 285.

Grulee, discussing treatment of decomposition, observes: "As a rule it is best to start with 2 to 2½ or 3 ounces of albumin milk to the pound weight in 24 hours; the sugar to be added is in the form of a maltose-dextrin mixture. One should never delay too long in adding this."—C. G. Grulee: *Infant Feeding*, W. B. Saunders Co., Phila., 1922, p. 265.

Referring to the hypotrophic infant, Herrman writes: "In mild cases, the addition of dextrimaltose instead of cane or milk sugar may be sufficient to obtain a gain in weight."—C. Herrman: *The treatment of nutritional disorders in artificially-fed infants*, New York M. J. 114:158-160, August, 1921.

In discussing artificial feeding in athrepsia, Hess states: "The carbohydrates are usually added in a slowly fermentable form, such as the maltose and dextrin compounds, which are usually started by the addition of four grams per kilogram (1/15 ounce per pound) and increased until eight grams or more per kilogram (¼ ounce per pound) of body weight are added."—J. H. Hess: *Feeding and the Nutritional Disorders in Infancy and Childhood*, F. A. Davis Co., Phila., 1928, p. 278.

Concerning the treatment of marasmus, Hill says: "When the stools have become smooth and salve-like, carbohydrate, in the form of dextrimaltose, may be gradually added up to the limit of tolerance."—L. W. Hill: *Practical Infant Feeding*, W. B. Saunders Co., Phila., 1922, p. 281.

"A spasmophilic baby on bottle feeding should receive a limited amount of milk—a pint, or at the most 24 ounces in the 24 hours—to which cereal gruel and some form of sugar is added, preferably one of the malt dextrin preparations; also the early addition of other foods than milk to the baby's

diet."—M. Jampòis: *Infantile spasmophilia*, Interstate M. J. 25:652, Sept., 1918; *abst. Arch. Pediat.* 35:691, Nov. 1918.

With reference to the treatment of diarrhea, Lust writes: "After several days, 2% to 3% of a maltose-dextrin preparation may be added (Dextri-Maltose). This is preferable to the easily fermentable lactose or cane sugar."—F. Lust: *The Treatment of Children's Diseases*, J. P. Lippincott Co., Phila., 1930, p. 145.

"The treatment of artificially fed children in the first of these groups consists in putting them on a low fat dietary, and giving them carbohydrate in the form of one of the less fermentable sugars—e.g., dextrimaltose."—L. G. Parsons: *Wasting disorders of early infancy*, *Lancet*, 1:687-694, April 5, 1924.

Pearson and Wylie in discussing the treatment of milder cases of inanition say: "Regulation of this disturbed organismal balance is obtained by the addition of carbohydrates, while fat and casein are reduced. For this purpose dextrimaltose and flour are better than the ordinary sugars, since they are more slowly absorbed and have greater efficacy in their powers of controlling the flora in the large intestine."—W. J. Pearson, and W. G. Wylie: *Recent Advances in Diseases of Children*, P. Blakiston's Son & Co., Phila., 1930, p. 116.

Regarding the treatment of the marantic infant, Raue states: "After the intolerance to sugar has been overcome a carbohydrate, preferably Dextrimaltose, may be added."—C. S. Raue: *Diseases of Children*, Boericke & Tafel, Phila., 1922, p. 427.

In discussing the treatment of atrophy, Thursfield and Paterson, state: "If the baby continues to improve, the next step in the treatment is to add to the milk one of the less fermentable carbohydrates, such as dextrimaltose; . . ."—H. Thursfield, and D. Paterson: *Diseases of Children*, William Wood & Co., 1929, p. 105.

"I also find dextrin-maltose an excellent addition to albumin-milk when the first object of that food has been achieved and a gain in weight is desired in this way I have succeeded in feeding albumin-milk far beyond the period usually advised, with highly gratifying results."—F. L. Wachenheim: *Infant-Feeding; Its Principles and Practice*, Lea & Febiger, Phila., 1915, p. 158.

"Dextri-maltose has been substituted for lactose not infrequently, when the tolerance for the latter continues low."—J. H. West: *Low fat, high starch evaporated milk feeding for the marasmic baby*, *Arch. Pediat.* 48:189-193, March, 1931.

"Malt sugar is indicated when others fail to produce a sufficient gain, or when malassimilation of fat is evident."—O. H. Wilson: *The role of carbohydrates in infant feeding*, *Southern M. J.* 11:177, March, 1918; *abst. Arch. Pediat.* 35:447, July, 1918.

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- (h) Depreciation on motor cars on cost; 20%, 1st year; 20%, 2nd year; 20%, 3rd year; 20%, 4th year; 20%, 5th year. The allowance is restricted to the car used in professional practice and does not apply to cars used for personal use.
- (i) Automobile Expense; (one car): This account will include cost of license, oil, gasoline, grease, insurance, washing, garage charges and repairs;
- (Alternative to (h) and (i)—In lieu of all the foregoing expenses, including depreciation, there may be allowed a charge of 10c. a mile for mileage covered in the performance of professional duties).
If Chauffeur is employed for business reasons, so that in the result he is substantially used for business purposes (although incidentally used for personal or family use), the expense will be allowed.

- (j) Proportional expenses of doctors practicing from their residence—
- (a) owned by the doctor;
 - (b) rented by the doctor;
 - (a) Where a doctor practices from a house which he owns and as well resides in, a proportionate allowance of house expenses will be given for the study, laboratory, office and waiting room space, on the basis that this space bears to the total space of the residence. The charges cover taxes, light, heat, insurance, repairs, depreciation and interest on mortgage (Name and address of mortgagee to be stated);
 - (b) Rented premises—The rent only will be apportioned inasmuch as the owner of the premises takes care of all other expenses.

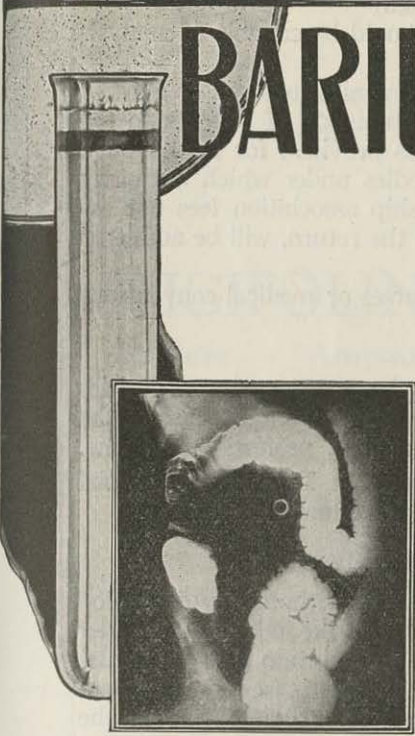
The above allowances will not exceed one-third of the total house expenses or rental unless it can be shown that a greater allowance should be made for professional purposes.

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- (k) Sundry expenses (not otherwise classified)—
The expenses charged to this account should be capable of analysis and supported by records.
Claims for donations paid to charitable organizations will be allowed up to 10% of the income upon submission of receipts to the Inspector of Income Tax. (This is provided for in the Act).
The annual dues paid to governing bodies under which authority to practice is issued and membership association fees not exceeding \$100.00, to be recorded on the return, will be admitted as a charge.
The cost of attending post-graduate courses or medical conventions will not be allowed.
- (l) Carrying charges;
The charges for interest paid on money borrowed against securities pledged as collateral security may only be charged against the income from investments and not against professional income.
- (m) Business tax will be allowed as an expense, but Dominion provincial or municipal income tax will not be allowed.

Professional Men Under Salary Contract

- (3) The salary of professional men will be taxed without any deduction therefrom except as hereunder provided unless the individual is under contract which requires of him, in order to maintain his contractual position to operate a motor car of his own, in which case if the principal does not pay the upkeep, running expenses and depreciation, the individual will be allowed to reduce the salary by such expenses as the use of the car in the earning of his income may cost, on the same basis as above provided for, i.e. expenses and depreciation or alternatively 10c. a mile for mileage covered in the performance of professional duties.

The annual dues paid to governing bodies under which authority to practice is issued, and membership association fees, not exceeding \$100.00 to be recorded on the return, will be admitted.

What Every Woman Doesn't Know—How to Give Cod Liver Oil.

Some authorities recommend that cod liver oil be given in the morning and at bed time so as to assure an appetite for the oil, while others prefer to give it after meals in order not to retard gastric secretions. If the mother will place the very young baby on her lap and hold the child's mouth open by gently pressing the cheeks together between her thumb and fingers while she administers the oil, all of it will be taken. The infant soon becomes accustomed to taking the oil without having its mouth held open. Mead's Newfoundland Cod Liver Oil, of minimum acidity and prepared from fresh healthy livers, is well tolerated by infants and children and is palatable without flavoring.

If given cold, cod liver oil has little taste, for the cold tends to paralyze momentarily the gustatory nerves. As any "taste" is largely a metallic one from the silver or silver-plated spoon (particularly if the plating is worn), a glass spoon has an advantage.

Mead's 10 D Cod Liver Oil is made from Mead's Newfoundland Cod Liver Oil. In cases of fat intolerance the former has an advantage since it can be given in $\frac{1}{3}$ to $\frac{1}{2}$ the usual cod liver oil dosage.

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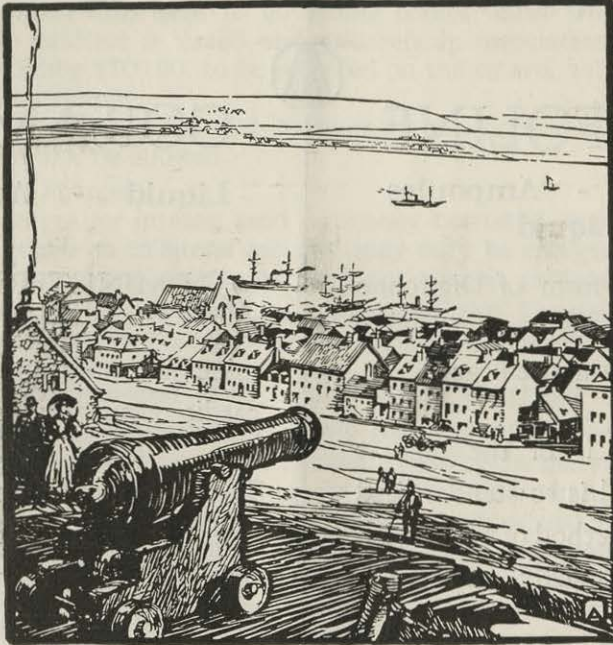
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