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Vascular and Vaso-Motor Disturbances of the Extremities*

J. G. MACDOUGALL, Halifax, N. S.

THE title of this paper as announced suggests an alarming vastness of scope. Be at ease! for I shall but take an aeroplane flight—to view some of the outstanding physiographic features.

On the Vascular side the veins and their disabilities need not be dealt with—inasmuch as the arteries arterioles and the vaso-motor system are the essential factors, or “*dramatis personae*” for present purposes. Let us look at these briefly to recall a few fundamentals, so essential to the fullest understanding and a rational interpretation of the phenomena in the extremities due to vascular or vaso-motor disorder observed by the clinician, for what he sees is but the outward manifestations of processes and conditions within these systems, and speaking of the vaso-motor diseases it may as well be stated at the outset “that we understand only the clinical expression.”

The arteries have the well known three coats:

- (a)—The intima or lining membrane, an exceedingly thin, one cell layer, smooth, delicate and adapted to permit blood flow with the minimum of resistance and without inducing in it harmful physical or chemical changes.
- (b)—The middle or muscular coat—with the fibres arranged mainly in circular fashion—some longitudinally and a varying amount of elastic tissue—all of which suggests the idea of strength proportionate to needs, and likewise potential (and actual) resiliency and adaptability to varied and various needs of the tissues, circulation and other circumstances.
- (c)—Finally the outer coat. A strong fibrous structure of supporting and strengthening character. More than this, however, is the fact that it carries lymphatics and the vasa vasorum (which give blood supply to the arterial wall itself). It carries the plexus of non medulated nerves—which links up the Vascular System anatomically and physiologically with that complex and enigmatic mechanism—the Sympathetic Nervous System—that to generations of medical scientists has refused to reveal its secrets directly. This System in turn, through its anatomical and physiological connection with the Cerebro-spinal System, gives a remarkable “hook up” of the Nervous and arterial Systems. It is a hook up with potentialities for great and widespread disturbance when some part of the line becomes deranged.

The arterial system then in its architecture, nerve hook up, and function, is highly dynamic; splendidly co-ordinated and delicately adjusted; responsive to the myriads of stimuli and varying needs—with mercurial quickness of

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action and likewise automatically balancing supply and demand every moment of our life thro expansions and contractions to maintain the equilibrium in the tissues, called health.

Temporary disturbances of this finely adjusted mechanism may have origin in the emotions (fear, terror, rage, etc.); as we well know as a part of every day experience. Chemical substances circulating in the blood as is well known, produce pathological changes in this system varying in degree of severity according to circumstances (adrenalin ergot, etc.)

Pathological changes in the arterial wall, per se, do more than limit or completely shut off the supply of blood to a part, with corresponding manifestations in the extremity, for in many instances the lesion present excites a reaction in the vaso-motor system which concurrently adds its expression to that of the former. Thus the phenomena observed by the clinician in some cases is the expression of combined vascular and vaso-motor disturbance. The number of vaso-motor disturbances of a more or less serious or important character, and independent of demonstrable lesion in the vessel wall per se, are many and bring to us problems on their own account difficult of interpretation and differential diagnosis.

In the light of this background the following questions arise in many cases and they are always worth remembering:

1. Is the disturbance due to some condition in the artery per se? Where? What?
2. Is the disturbance vaso-motor in origin? Where? Why?
3. Is it in origin neurogenic or neuropathic?
4. Is it extrinsic in origin? e.g. as produced by a cervical rib causing pressure on nerve trunks.

It may be in order here to note a few facts:

- (a) Elevation of an extremity induces a contraction of its arteries and arterioles, causing palor of the skin and lessening the volume of blood passing to the tissues, (ischemia) and if prolonged skin temperature becomes lowered. The practice of elevating an extremity to render it less vascular before applying a tourniquet is based on this fact. It is due to an active and positive process in the neuro muscular mechanism of the arterial wall and not due to the influence of gravity as far as the artery is concerned. (This principle was laid down by Lister, as a result of an observation he made when travelling on a hot summer day in a railway carriage).
- (b) An artery pressed, pinched or handled will visibly contract in the immediate segment touched, and the contraction may be so marked that the pulsation at a point distally may not be discernable by the finger, and there is a corresponding fall of blood pressure. This is strikingly noted immediately, and for a variable length of time some hours after removal of a segment of the adventitia as in Periarterial Sympathectomy.
- (c) This initial contraction for a period following Arterial Sympathectomy is followed by a prolonged period of dilatation of the artery (several months), rise of skin temperature and of blood pressure.
- (d) Heat of a degree much above body temperature applied to the extremity causes slowing of local flow in the capillaries.
- (e) Cold causes contraction.

- (f) Pinching of an artery by forceps, as when operating, causes pain. This is frequently noted by Surgeons and has given rise to conflict of opinion between surgeons and anatomists—the former speaking in terms of vaso sensory as opposed to vaso-motor—the common acceptance. More debunking you will say.
- (g) Certain drugs, as is well known to all, cause vaso-constriction and a restriction of volume of blood in the arterioles while other drugs cause a vaso-dilatation with increased volume of blood and warmth.
- (h) That absence of pulse, it would appear in some vaso-motor disturbances, does not imply that no blood is passing through the vessel.

With all the facts in mind one is not surprised to find disturbances of vascular or vaso-motor mechanism giving rise to a multiplicity of gross conditions in the extremities of various degrees of severity and seriousness—expressed in terms of massive local oedema, ischaemia, cyanosis, rubor hyperaesthesia, anaesthesia, parasthesia, ulceration and gangrene in various combustions with pain frequently as an outstanding feature of the symptom complex. It is also obvious and it is proven by experience that much thought and attention to details is essential in the management and treatment, for in some cases at least the loss of a limb, or the saving of it may turn on some detail, which in ordinary circumstances would be trivial or non essential.

Some of the commoner known disturbances of purely vascular origin are due to:—

- (1) Sudden occlusion of an artery by embolus, thrombus or traumatism.
- (2) Arteritis Obliterans.
- (3) Aneurism
- (4) Arterio Sclerosis.
- (5) Thrombo angiitis obliterans (Buerger's Disease).
- (6) Pressure on an artery (e.g. cervical rib).
- (7) Old injury to an artery causing occlusion and most of these must be carefully differentiated from the *Vaso Motor group*—due to neurogenic or neuropathic disturbance, causing vaso constriction or vaso-dilatation which in turn gives rise to secretory, painful, trophic and other phenomena we recognize in the syndromes of such, as:—
 - (1) Raynauds Disease.
 - (2) Acroparaesthesia and acro cyanosis
 - (3) Certain acute and chronic oedemas.
 - (4) Certain types of gangrene, ulceration, etc.
 - (5) Erythro melalgia, etc.

The problem of diagnosis is seldom an easy one and it is often a big one. Cases of sudden obstruction or near obstruction, though apparently not difficult of diagnosis, may be and are sometimes missed at the time necessary for the operative or other treatment that would prevent gangrene and the loss of an extremity. It is with disappointment and sorrow that the surgeon amputates the gangrenous limb to-day, as he contemplates the satisfaction and joy that would have been his through a timely limb saving embolectomy one week ago.

In the less acute conditions, but with threatening signs of gangrene, it is obvious that all the powers of diagnosis and differential diagnosis should be brought into play, in order to base treatment rationally and promptly.

In the various vaso-motor conditions of a more or less chronic nature, having a syndrome of which pain is an outstanding feature, there is always a challenge to powers of differential diagnosis, and surgical judgment. To operate or not to operate, "that is the question"—and if to operate, what procedure will give the desired—or at least the best—result. This is not an easy problem but help in solving it is found in systematic investigation—a *sine que non* of every case.

To this end the following plan of examination should be carried out:—

1. The routine investigation.
2. "General appearance of the limb" and comparison with the other.
3. "The presence or absence of redness or Cyanosis in the pendent position of the limb."
4. "The existence of ischaemia on elevation of the limb, and the interdependence of change of position and blanching."
5. "The absence of some or all of the usual pulsations."
6. "The angle of circulatory sufficiency" by testing in various positions.
7. "The possibility of eliciting reactionary or induced rubor."
8. "The presence of migrating phlebitis"—e.g. Thrombo Angiitis obliterans.
9. "The existence of trophic disorders and gangrene."
10. Some employ an oscillometer to determine the range and force of the oscillations as an index to the circulation efficiency in the arteries.
11. The surface temperature may be noted.

On the result of such an inquiry a sound basis for differentiation and rational treatment rests.

TREATMENT.

Surgery has an important place in the treatment of many of the conditions named. In some, operation is the treatment of choice, in some others it gives a degree of help that justifies its employment and finally in another group it is employed as a last resort, when relief has not been obtained by other measures, and some of the features suggest the hope of help from operation.

Operation should be looked upon as a necessity in sudden occlusion due to embolus in one of the larger arteries. Arteriotomy to remove the embolus should be done. The diagnosis should be made promptly and the operation performed within the first few hours when possible, for after that, every hour of delay greatly diminishes the chances of saving the limb, and if 24 hours have elapsed, the chances of a favorable result are almost nil.

Surgical operations of deliberation are now employed to cover a wide range of cases—and though still on an empirical basis, the knowledge obtained by the method of trial and error is of great value, and is constantly increasing. Many failures have been experienced—but likewise great success. We know from this experience that types formerly treated surgically should and must be treated by other methods.

The study of failures, improved methods and quality of investigation, and intensified study of syndromes in individual cases have tremendously increased our powers of differentiation and interpretation. This in turn has broadened the scope of surgery in this domain, with ever increasing assurance and satisfaction. On the basis of this knowledge and experience we know that in cases of marked narrowing or blocking of the artery—as in

arterio sclerosis, arteritis obliterans, Buerger's Disease (Thrombo Angiitis Obliterans) and conditions of the extremity presenting redness of the limb in all positions, operation cannot be expected to result in success. Likewise, unless after adequate investigation and thought, a case of suspected Raynaud's Disease is shown to be a pure case of this disease, operation should be deferred indefinitely. In short operation is best omitted. On the other hand we can, with a high degree of assurance of success, excise the obliterated section of an artery damaged by an old injury, following which there is a vaso-motor syndrome with pain that impels a search for relief.

There is a large group of vaso-motor manifestations in the extremities that derive either cure or relief from operation on some part of the sympathetic, such as traumatic oedema, trophic and other conditions which fulfil the indications for operation already referred to. It should not be necessary to advise looking for a cervical rib in cases of unilateral arm and hand vaso-motor manifestation before advising or doing an operation on the vessel or sympathetic nerve—please discover and remove the rib.

The operation is usually either a periarterial sympathectomy (removal of the adventitia over the entire circumference of the artery for a length of a few centimeters) or a section of a sympathetic nerve ramus related anatomically with the extremity involved. The former is really a section of the vaso-motor (or as some surgeons now say, Vaso Sensory) plexus of the sympathetic lying in the adventitia. Some fundamental facts have been noted already. This brings us to the border of a remarkable realm. The sympathetic and its surgical problems, and enigmas. I dare not enter it for very obvious reasons, even if time permitted.

Coming now to treatment other than operative one may say that there is a group of cases in which for one or other reason, the circulation in the extremity is so feeble and so poor that death of the tissues may occur before collateral circulation is established, or the cause removed or mitigated. These are the cases in which some otherwise trivial omission or commission, or circumstance may turn the balance the wrong way.

Generally two requirements are present and pressing:—

1. To maintain circulation in the extremity, until collateral circulation is established.
2. The relief of pain (this latter, however, may not be constant. With ischaemia we expect pain, and often it is very severe).

To this end a program of management and treatment should be drawn up with the greatest possible care. It should always include the principles founded on facts already stated.

The following may be briefly noted:—

1. *Posture is Important.*

There is practically always a position of the extremity somewhere between the horizontal and the fully pendent which gives relief of pain wholly or in part, and in like manner promotes circulatory improvement. This position is designated as "the angle of circulatory sufficiency". The increased warmth, improved color and other features of the extremity clearly demonstrate the value and the need of securing this position.

2. *The Maintenance of Warmth Constantly.*

To preserve the natural warmth the extremity should be covered thickly by cotton lightly held in place by a bandage. The application of artificial heat is a helpful adjunct but caution is necessary as to method of application and degree of temperature. Regarding the former, the use of the hot water bottle and kindred methods should be banned. The uncovered cradle containing not more than one or two electric bulbs is favored in some clinics. The temperature should be but a few degrees above that of the body—and not above, say 104 to 105°.

3. *Rest of the Extremity.*

Arranged for and regulated according to circumstances and one's best judgment.

4. *The Avoidance of Unevenness of Surface* on which the extremity rests (if supported in its length).

5. *Employment of Vaso-dilator Medicines.*

These are helpful in relieving the ischaemia of the muscles and the pain due to it.

In addition to the older remedies of this class there are the newer ones in use and maybe noted in the following list.

Pancreatic Tissue Extract.

Typhoid Vaccine.

Papaverine Hydrochloride in $\frac{1}{2}$ grain doses intravenously and Theobromine Sodii Salicylate, 20 grain doses.

It will not be unpleasant news to many sufferers from arterial and vasomotor troubles, which threaten them with cessation of the blood supply to their extremities and consequent gangrene—that “a little drop of gin” (alcohol) continues to be recommended as prophylactic against such disaster, by virtue of its vaso-dilator effects.

I am conscious that I have told you nothing new, and took up too much time in the telling. The subject, however, and the entire system to which it relates is alluring. There is a large territory with remarkable potentialities for the studious to explore. The most of what we know of it has come through clinical investigation and the operating room. The part of the field from which our garnerings have come is the extremities—the part of the body where the phenomena can be observed and interpreted to most advantage. Now, if by introducing the subject in this way—admittedly a feeble effort, a stimulus to further thought and observation has been provided—I am rewarded.

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Some Recent Advances in Surgery

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MANY changes and improvements have occurred since graduating in medicine twenty-five years ago. One of the most remarkable has been the almost abolition of extensive operations for tuberculous lymph nodes in the neck. This is explained by the removal of diseased tonsils, carious teeth and the great improvement in the milk supply. Mutilating operations for malignant disease of the tongue, jaws and pharynx have been largely replaced by the advent of radium and deep X-Ray therapy. The greatest advance in the treatment of fractures of the lower limb has been the universal adoption of the Thomas splint and modified Balkan frame. Kirschner wire extension has almost supplanted adhesive strapping. There is not any comparison in the efficiency of the Kirschner wire to adhesive strapping for extension. It has done an enormous lot to reduce the incidence of formidable and dangerous operations for plating fractured femurs. The portable X-Ray has been of inestimable value in judging of the successful result of Kirschner wire extension. It is, of course, impossible to move these patients in many cases to the main X-Ray room.

In abdominal surgery the most remarkable improvement has not been in the technique of operations, but in the reduction of mortality due to new development in pre-operative and post-operative treatment. Blood transfusion is now an every day procedure. Undoubtedly, it is of vital aid in preparing a patient with a secondary anaemia to come through a serious operation. We have given as many as seven transfusions to prepare one patient for a major operation (splenectomy), and with most gratifying results. The duodenal tube attached to a suspended inverted bottle, partially filled with water, to maintain a negative pressure for suction, has been responsible for saving many lives from intestinal obstruction, pre and post-operative vomiting. This is a simple apparatus and should be generally known to every practitioner. Continuous intravenous saline given through a special needle (Hendon) is of inestimable value in giving fluids, drop by drop, over prolonged periods of one to five days. We find it very helpful in cases of shock and toxæmia, following toxic goitre operations, intestinal resections and any cases where fluids cannot be freely taken by the mouth. If necessary, a citrated blood transfusion can be given through the needle. The surgery of goitre has been made infinitely safer by the pre-operative administration of Lugol's solution, metabolic tests, and graded operations in bad risks. In surgery of malignancy of the large bowel, the reduction in mortality is largely due to two or multiple stage operations. The most common examples of this are operation for carcinoma of the rectum and pelvic colon. A small rubber tube inserted into the caecum or small intestines, following Witzel's technique, saves many lives in operations for intestinal obstruction.

There have been notable improvements in anaesthesia. Aversion used as a basal anaesthetic, reduces the amount of the general, and helps materially to reduce the mortality in a bad risk. Spinal anaesthesia has become popu-

lar again for certain types of patients. One of the great advantages is the perfect relaxation of the abdominal muscles, and the absence of straining. It is of great advantage in difficult technical operations, in affording the surgeon an easy field to work in. Physicians, who specialize in anaesthetics, are a great boon to hospitals, as their experience will be most helpful in deciding which of the many anaesthetics is the safest for a particular patient. As a result of their long experience they are able to warn the surgeon of early danger signals in the patient's condition, so that appropriate treatment can be carried out immediately.

Acute Intestinal Obstruction.

Recent work has shown that the loss of blood chlorides and dehydration are the most important causes of death. This is most marked in a high intestinal obstruction and does not obtain to the same extent in one affecting the large intestine. Saline solution given intravenously acts almost as a specific, in restoring the patient's shocked condition in a high obstruction, so that an operation may be carried out with a much greater degree of safety. Another change in the blood chemistry is a rise in the non protein nitrogen which may attain as high a level as in uraemia. It is of prognostic value because if it continues to rise in spite of appropriate treatment, the patient will probably die.

The importance of early diagnosis of intestinal obstruction and surgical interference is not generally recognized. There is intermittent cramping abdominal pain, accompanied by intestinal borborygmi, heard by the stethoscope at the height of the pain. These signs are accompanied by nausea, vomiting and abdominal distension. Remember that the expulsion of gas with an enema is not conclusive evidence against obstruction in an early case. Patients with a strangulation type of obstruction, when the arteries and veins are compressed, supplying the loop of bowel, always show localized tenderness and rigidity, due to an escape of blood-stained fluid. This is most typically seen in a strangulated hernia. Strangulation varieties of intestinal obstruction are always to be dealt with as surgical emergencies, because of the threatened devitalization of the bowel.

Surgeons have long known that a well performed enterostomy, will save the majority of persons with late obstruction, but an attack directly on the obstruction, e.g. resection of the bowel, is extremely hazardous to the patient's life. Enterostomy is life saving in such emergencies, not so much because it drains off toxic fluids, but because it relieves tension within the bowel and restores the normal blood supply. This allows the continuance of absorption from the bowel, which has practically ceased in obstruction.

Wageensteen of Minneapolis has written a valuable paper on the treatment of certain types of intestinal obstruction by means of a duodenal tube passed through the nostril down to the stomach and duodenum. This is attached to an inverted bottle of water which maintains a negative pressure. The suction apparatus not only withdraws the stomach and duodenal contents, but also removes large quantities of gas. This method is most useful in post-operative obstruction following a perforated appendix with peritonitis. X-Ray films should be taken of the abdomen. The early films will show distended small bowel and a fluid level. If the suction works successfully, in twenty-four hours X-Ray films will show gas entering the caecum and large intestine. The rationale of the success of this method of decompressing the

small intestines, is that removal of the intestinal gas, improves the circulation to the obstructed loop and allows the gas to be absorbed again and also to be passed on

It is extremely important in carrying out this treatment that 4000 cc. to 6000 cc. of saline with glucose be administered every twenty-four hours, preferably by the intravenous drop method. The output of urine in twenty-four hours should be maintained at 1000 cc.

This method of decompressing the bowel is not suitable for obstruction in the large bowel, because the ileo-caecal valve prevents regurgitation of the gas into the small intestine.

Gastric and Duodenal Ulcers

It is generally agreed that only a small percentage of gastric ulcers eventually become malignant. Ninety per cent. of gastric ulcers occur on the lesser curvature. Ulcers on the greater curvature are rare, but when they do occur, should be treated by surgery as they are almost invariably malignant. Pre-pyloric ulcers are also suspicious of being malignant. These cases should be given a short trial under medical treatment; if the symptoms are not relieved, and occult blood does not disappear from the stools, and the X-Ray does not show a *filling-in* of the crater, then they should be treated by radical surgery, a partial resection of the stomach.

Duodenal ulcers are treated by medical measures, unless certain complications occur. Perforation demands an immediate operation. It is rather remarkable that perforation often occurs in a patient who has never had any symptoms previously to suggest a duodenal ulcer.

An acute duodenal ulcer often has such a degree of pyloric spasm, as to cause to marked gastric residue. There is a strong temptation to perform a gastro-enterostomy on these cases. This is bad surgery. If these patients are put at rest and on an ulcer regime, the spasm will entirely disappear in the course of ten days to a fortnight. The ideal case for a gastro-enterostomy is an old duodenal ulcer which has caused pyloric obstruction due to scar tissue. Such a case, if put at rest and on ulcer diet, will not show any diminution in the gastric residue.

Repeated massive haemorrhage from a duodenal ulcer offers a very difficult problem. They do not do well under medical treatment and their best chance of cure is by surgery. Multiple blood transfusions will often be necessary to prepare for operation. The ulcer, unfortunately, is on the posterior wall of the duodenum in eighty per cent. of cases. This is a very difficult operative field to expose and deal with. The ulcer should be attacked directly by opening the duodenum and excising the ulcer with the cautery or at least closing the base with sutures. A pyloroplasty is the least dangerous operation to perforation, and gives better results than a gastro-enterostomy. A resection of the duodenum and stomach should only be carried out if these measures fail, and with a patient a good operative risk.

Gastro-enterostomy has fallen into disrepute for the treatment of duodenal ulcer on account of the liability to gastro-jejunal ulcer. This is particularly apt to occur in the young. When a gastro-jejunal ulcer does occur, it is one of the most difficult and hazardous lesions to cure by surgery.

Carcinoma of the Colon.

When occurring in the left colon, increasing constipation and obstruction are the common symptoms. These are explained by the annular type of growth

and the solid contents of the bowel. Carcinoma of the caecum and right colon usually cause diarrhoea with a profound secondary anaemia. The type of growth instead of being annular as on the left side, is an ulcerative Cauliflower type, and the contents of the bowel are liquid. The absorption of toxins from the ulcerating growth explains the profound secondary anaemia. It is a good rule, in a patient with a severe secondary anaemia, to rule out three conditions: (1) carcinoma of the stomach; (2) carcinoma of the right colon; (3) pernicious anaemia. This will necessitate a barium meal, gastric analysis and examination of the stools for occult blood. A barium enema should be given for diagnosing lesions of the colon. Complete obstruction has occurred when the barium is given by the mouth in lesions of the left colon.

Any patient complaining of haemorrhoids or passage of blood with the stools should have a digital and sigmoidoscopic examination carried out. Many early carcinomas of the rectum are missed because not even a digital examination was made. Sixty per cent. of cancers of the large bowel occur in the rectum or recto-sigmoid junction. Recently we examined a sailor, who had been treated for several years for ulcerative colitis. He had a profound secondary anaemia and was losing weight and strength. Sigmoidoscopic examination of the rectum showed an extreme degree of polyposis. At the recto-sigmoid junction was a very definite carcinoma, which appeared to be movable. It is well recognized that polyposis is a frequent complication of ulcerative colitis. Malignant degeneration of these polypi is prone to occur. This patient, after several blood transfusions, came through a two stage abdomino-perineal excision of the rectum. He is gaining rapidly in weight and strength.

The most important precancerous lesion in the rectum is a polyp. This will only be discovered by making a thorough rectal examination. The polyp can be easily destroyed by fulguration through a proctoscope. The patient will be saved the catastrophe of a malignant change at some future date. Cancer of the rectum is a curable disease if the diagnosis can only be made early, before infiltration outside the bowel and metastases have occurred. The importance of rectal examination in middle aged patients, who may only have what seem trivial complaints, cannot be over-emphasized.

The mortality of the modern operation has been vastly reduced. The two stage abdomino-perineal excision of the rectum should not have a mortality over ten per cent. If the operation is carried out before infiltration of the adjacent tissues and metastases to the lymph nodes have taken place, fifty to seventy-five per cent. should show a five year cure.

Carcinoma of the Lip and Mouth.

The present day treatment of malignant disease is by a combination of surgery, radium and high voltage X-Ray therapy. Surgery, once the only method of treating malignant disease in this area, now holds an auxiliary rather than a dominant role.

The lip offers one of the most favourable sites for curing cancer, anywhere in or on the body. Ninety per cent. of cases should be cured if only the diagnosis is made early, and appropriate treatment is carried out. The most important diagnostic point is a persistent sore on the lower lip and an indurated base. A biopsy should be done to make certain of the diagnosis and to warrant such a serious operation, a block dissection of the regional lymph nodes. We are of the opinion the regional lymph nodes should be removed, providing

the patient is a good risk and the nodes are not fixed. We also believe that if they are not palpable, that the dissection should still be carried out. Metastases may be present, which only the pathologist will discover. We are aware that some clinics disagree with this view, and only advise operation when the glands are palpable and definitely malignant. They argue that the occurrence of metastases from the lip, is comparatively infrequent. The primary lesion in the lip, if small, can be treated equally well by radium or excision. The advanced lesions of the lip are best treated by surgery, which necessitates an extensive plastic operation. Radium in extensive lesions produces so much necrosis, that a plastic operation must eventually be done.

Cancer of the tongue and mouth is a very much more serious lesion than of the lip. It is believed that seventy-five per cent. would not occur, if the triad of leukoplakia, excessive smoking, and septic teeth could be eliminated. It cannot be too strongly emphasized that cancer and syphilis are frequently present in the same patient. In an adult, a high percentage of chronic sores in the mouth are malignant. Leukoplakia alone, accounts for thirty-five per cent. of buccal cancer, and leukoplakia before the advent of cancer is curable. Small patches of leukoplakia, which do not promptly respond to the removal of local irritation, or those which show papillary overgrowth or fissures, are best treated by fulguration or excision with the scalpel. The first physician who sees the case should regard every wart, fissure or ulcer, as cancer until proved otherwise. This would enormously improve the curability of cancer of the mouth. The only certain way to make a definite diagnosis is by an immediate biopsy. Don't treat the patient for syphilis only, if the Kahn test is positive. Do a biopsy and make certain of ruling out cancer. The section for biopsy should be taken from the edge of the ulcer and include some of the deep tissue. It is a good rule to do a second biopsy when the pathologist's report is at variance with the clinical appearance. The first biopsy may have been taken from an area where malignant change was not present.

The mutilating operations for cancer of the tongue which were common twenty years ago, are seldom carried out to-day. The advent of radium, fulguration and deep X-Ray therapy have largely replaced surgery, except for block dissection of the regional lymph node. Early carcinoma of the tongue should be widely excised with a margin of 1.5 centimeters of non-indurated tissue. It may be treated by implantation of radium seeds, but we prefer the excision. Advanced lesions of the tongue are best treated by deep X-Ray therapy. Foul ulcerating growths of the cheek are treated by fulguration to remove the necrotic tissue and then follow this up with deep X-Ray therapy. The regional lymph nodes, if considered operable, should be removed by block dissection. Radium must be used cautiously in the neighbourhood of bone, as it is prone to cause necrosis and subsequently much pain and delayed healing. Before any treatment is carried out for malignant disease of the lip and mouth, it is essential to eradicate all septic teeth.

The Management of Head Injuries

VICTOR O. MADER.

THE great increase in head injuries which has occurred in the last fifteen or twenty years can largely be traced to the invention of the internal combustion engine. No part of our country is free from the risks which seem to go hand in hand with its use. During the last two decades many changes have come in the handling of head injuries, particularly with respect to brain injury, and indeed the subject is at present one of keen controversy in many of its phases.

There has come the realization that fracture of the skull, per se, is usually a secondary consideration and also that the terms concussion, contusion and compression as separate entities are of questionable value in the observation and treatment of a case. Confronted with a severe, or perhaps what may appear to be a slight head injury, the all-important point to decide is whether there is likelihood of such injury producing an increased intra-cranial pressure. My chief concern in this paper will be to outline the clinical pictures and progress of symptoms and signs in severe cerebral injuries and their interpretation as indications for treatment.

No consideration of this subject could claim to be of value unless prefaced by a study of certain anatomical and physiological conditions which bear such a constant and important relation to brain injuries. The pathological conditions which arise within the skull as a result of head injury are the result of circulatory disturbances. "The cardinal fact in the physiology of the cerebral circulation is that the brain and its blood vessels are contained in a rigid capsule of bone." The blood enters the cerebral arteries at a pressure of say, 150 mm Hg. As the great cerebral vessels divide into smaller ones and the total area of the cross section of the latter becomes greater and greater, the pressure rapidly falls. The pressure in the arterioles and capillaries lies between arterial and venous pressure. When the venules, veins and venous sinuses are reached the pressure is but little above zero. The veins and venous sinuses have a much greater volume than the arteries, and hence on the venous side there is a fairly large volume of blood which may be displaced.

The cerebro-spinal fluid is virtually at the same pressure as blood in the veins and sinuses and this fluid may also to some extent be displaced. The venous sinuses are within the influence of the suction of the respiratory movements, and consequently the cerebro-spinal fluid pressure normally varies with this. We can, then, distinguish three more or less definite grades of pressure prevailing within the skull.

1. The general intra-cranial tension, which is that of the veins, sinuses and cerebro-spinal fluid of the ventricles and cisterna. This is the low pressure, subject to respiratory fluctuations, and is the same in different parts of the skull.

2. The capillary pressure, or that of the brain substance itself. This is the resistance which the brain substance exerts when any pressure is made upon it.

3. The arterial pressure. This high pressure being contained in strong walled vessels, is, of course, shut off from being communicated to the brain

substance or the cerebro-spinal fluid. The effect of a rise of carotid blood pressure is to accelerate the flow of blood through the brain and as long as the vessels remain intact cannot of itself produce any change of function.

One further point regarding the anatomy. The total cross section of the arterial inlet is much smaller than the cross section of the outlet (venous). The volume of blood entering the skull in a given unit of time is equal to the amount leaving, the one under high pressure and the other under low pressure. Thus, if by any lesion the volume of the intra-cranial contents is so enlarged as to displace the blood in the venous sinuses and so narrow their lumen until the total cross-section of the outlet is virtually smaller than the arterial inlet, a rise in the venous pressure will follow and venous congestion will occur. This rise in venous pressure will be accompanied by a rise in cerebro-spinal fluid pressure or in other words the general intra-cranial pressure. If the process goes still farther and the pressure rises still higher the capillary pressure will be reached and the brain and its capillaries will be compressed and anaemia will result. (Cushings experiment, vide).

The symptoms and signs of acute brain injuries are due to intra-cranial lesions varying the pressures as indicated in the considerations just mentioned, and especially by producing venous congestion or anaemia. The localizing signs (sometimes) seen are due to varying pressures in different parts of the cranial cavity as may be produced by a localized lesion.

It may be taken as a general rule that venous congestion produces irritability and that anaemia produces paralysis, at least as far as the cerebrum is concerned. In dealing with the vital centres in the medulla this remark must be qualified.

It is with the realization that all serious injuries to the brain are associated with grave disturbances of the circulation, haemorrhage, oedema, venous congestion and anaemia, a combination of these, or, more usually a progression through varying stages, that a rational programme of observation and treatment can be outlined.

Confronted with a case of head injury one should make a rapid though as complete an examination of the patient as the circumstances will allow.¹ Many valuable points may be gathered in a short space of time. Notes, how accident occurred, regarding consciousness, headache, vomiting, both pupils, abdominal and plantar reflexes, knee jerks (always on both sides), the presence or absence of haemorrhage or escape of cerebro-spinal fluid from the ears, nose or mouth, echymosis or swelling about the eye, and the pulse rate should be recorded. The blood pressure should be taken as soon as possible. The examination would, of course, include observation of other injuries if present. Morphine^{2,3} should never be given, and the immediate object of treatment should be directed, not against the brain lesion itself, but against the oncom-

1. Coleman, J. A. M. A., p. 1697, 1931—The history of the accident, if obtainable, and such examination as is made of the patient in the early stages should be carefully recorded from time to time, because the difficulties of estimating the progress of the case are enormously increased if comparative studies cannot be made of the patient's condition.

2. Mock, H. E., 1931—One should remember that morphine is a respiratory depressant. Many times I have seen the symptoms in skull fracture so disguised by the use of morphine that one cannot be logical concerning the future treatment of the case. In cases of extreme delirium and great shock on admission, one may be justified in administering morphine rather than see such a patient thrash himself to death, but it is seldom indicated.

3. Coleman, Jour. A. M. A., page 1699, 1931—We have used morphine in the treatment of head injuries perhaps more often than is the practice in other clinics. It should be used with great judgment, and certainly its use should be prohibited when there is evidence of marked intra-cranial pressure. Many patients, however, appearing to have cortical injuries with irritability (possibly by blood), with extreme restlessness and at times maniacal behaviour, often do not have any rise in the intra-cranial pressure, and their restlessness must be controlled. If the simpler drugs such as phenobarbitol, chloral or bromides do not act, then we have no hesitation in giving morphine.

ing or already present shock. The early duties of the practitioner who first sees the case are:—

1. Treatment or prevention of shock.
2. Observation of neurological data.

It is the early shock so frequently present in cases of severe brain injury, resulting either from the head injury itself or from other injuries of the chest, abdomen, or limbs, which later cloud the purely cerebral signs. This is one reason why early observation may become so important as the patient is recovering from shock.⁴

Immediately on admission to the hospital or to the most suitable place available, the usual treatment for shock should be instituted, but with these three most notable exceptions:

1. Do not raise the foot of the bed.
2. Do not give intravenous normal saline.
3. Avoid morphia.

Wrap the patient in warm blankets, use hot water bottles and give black coffee by rectum.

When this has been carried out or arranged for, the most important examination is made. This examination should be thorough, though carried out rapidly, and special attention paid to the neurological findings. These observations should always be noted with the time, as the rapidly changing findings may confuse even him who boasts of a flawless memory. Having regard for the presence or absence of initial shock, where possible, observations should be repeated every fifteen minutes to an hour according to the indications demanded by the individual case. In addition to the ordinary neurological examination, examination of the fundi, and a lumbar puncture and determination of pressure with the spinal manometer must be performed. The careful record of temperature, pulse rate and blood pressure, and the observation of the fundi and the spinal pressure will give the most valuable data during the progress of the case. And it is upon the data so obtained that the decision of expectant treatment or operation depends. In addition it will warn the surgeon when the time for a successful operation has passed.

From the observations so made, we can divide our cases at any given time into four stages of compression and the process may be arrested at any stage. We have not classified our case as compression, contusion or concussion; but we know that no matter to which class the primary lesion may belong, our chief object shall be to observe the signs of increasing intra-cranial pressure which may be due to extra-dural, sub-dural or intra-cerebral haemorrhage, to cerebral oedema or "wet brain". And it is against increasing intra-cranial pressure that our treatment is directed; the signs and symptoms and the changes in these from the very earliest opportunity throughout the progress of the case will give the most valuable information as to the degree of pressure and the rate of increase.

It may be safely said that in less than one-third of cases of increased intra-cranial pressure due to brain injury is the operation of decompression indicated. In the four stages to be outlined non-operative treatment is indicated in the first and no treatment is of avail in the fourth. It is the case passing

4. Coleman, Jour. A. M. A., page 1697, 1931—A very constant result of head injuries is shock. A brief comprehensive examination of the condition of the patient is all that is needed when he is in this state of shock, but the examination should determine as accurately as possible and without undue disturbance of the patient, the presence of focal signs and of associated injuries. Injuries in other regions, particularly those of the chest, are often overlooked in an unconscious patient, and sometimes determine the outcome of the case.

through the second and third stages which may be saved by operation, whether there are localizing signs or not, and whether the intra-cranial pressure is due to haemorrhage or oedema.

In the *first stage of compression* the increase of intra-cranial volume first expels the excess of cerebro-spinal fluid and then compresses the veins and venous sinuses. When this takes place the virtual cross-section of the veins becomes narrowed and venous congestion occurs; the symptoms are headache, drowsiness or stupor, and possibly, vomiting; the pulse, respiration and blood pressure are little affected; the retinal veins become dilated. The cerebro-spinal fluid pressure is moderately raised. The treatment at this stage is free catharsis, magnesium sulphate enemata and hypertonic saline intravenously in some cases. The cerebro-spinal pressure may be lowered to normal at the time of the spinal puncture and this procedure may be repeated if necessary.

If, however, the pressure rises still higher, it tends to approach the capillary pressure and partial amaemia results. This may be called *the second stage of compression*. The headache is severe, and is associated with restlessness or even delirium; cyanosis usually appears; the pulse rate drops, usually to 60 or lower; the respiratory rate is decreased, deep but regular; there is a moderate rise in the arterial blood pressure due to stimulation of the vaso-motor centre. Stupor or even unconsciousness may appear, but the unconsciousness is of the periodic type, rather a deep stupor from which the patient may be aroused at intervals. The ophthalmoscopic examination reveals dilated retinal veins and possibly some blurring of the optic discs. The spinal tap shows the cerebro-spinal pressure to be double normal or even higher. Here previous observations will be of the most inestimable value as the question of operation has now arisen.

If the pressure is a local one, as for instance due to middle meningeal haemorrhage or a depressed fracture of the vault, then a local anaemia of the underlying cortex will result, with impairment of function of that cerebral area. Under these circumstances there may be localizing signs; nevertheless it is the medullary impairment that is most to be feared, and the operation of decompression is usually indicated in this stage whether there are localizing signs or not. The localizing signs, if present, are a great aid, but if absent, as in cases of intra-cerebral haemorrhage or of cerebral oedema, operation is no less indicated.⁵

If relief is not given in the second stage the case is most likely to go on to the *third stage*, or the stage of *major medullary compression*. The clinical picture is striking and need never be mistaken. Unconsciousness is almost always present, pulse rate is 50 or lower, respirations 12, 8 or even slower and blood pressure raised. The pulse and respirations take on a Cheyne-Stokes character. All reflexes may disappear and reappear again at intervals. Even consciousness may return at brief intervals. The retinal veins are dilated, and blurring of the optic discs may be seen; cyanosis of the face and even dilatation of the veins of the scalp, forehead and upper eyelids may be seen. The cerebro-spinal pressure as shown by the manometer has risen to three times or more than normal, and if the manometer is not available it will squirt out of the needle. When this stage has been reached, unless immediate de-

5. Neuro-Surgery, Sharpe, 82—The fracture in these cases is possibly the most unimportant part of the pathology to be considered in the treatment; whereas the presence of a marked increase of the intra-cranial pressure above twice the normal, with or without a fracture of the skull, should immediately cause the patient to be withdrawn from that large group of cases properly treated by the expectant palliative method, and the advisability of an early operative procedure to relieve the increased intra-cranial pressure should be considered, whenever the expectant method of palliative treatment, aided by saline dehydration and repeated lumbar punctures of spinal drainage, fails to lower the pressure.

compression is performed, these cases rarely if ever, survive. Our object should be to prevent cases entering this stage, if possible, and this is often possible, but only by constant watching through the first and second stages, and the institution of the expectant palliative treatment in the first stage and usually the decompression operation in the second stage. There is no doubt that many cases may reach this stage so rapidly that no treatment is of avail.

This third stage may last for hours, though the cases I have observed lived a very short time. The medulla eventually fails and the vagus, vasomotor centre and respiratory centres are paralyzed. The *fourth* stage, or the *stage of medullary oedema*, is reached. The respirations are rapid and shallow, the pulse rapid and weak, the blood pressure falls, pupils dilate and death is inevitable.

Let me emphasize the importance of observation at regular intervals as indicated—pulse, respiration, temperature, blood pressure, reflexes, pupils and general neurological examination and perhaps more important than all, the fundi and the spinal pressure recorded by the spinal manometer. This may sometimes mean even days of observation. The information so gained will indicate the treatment at the various stages, show the benefit or otherwise of the treatment exhibited, and will be all important when the decision as to whether operation is necessary arises in a minority of these cases.

During the first stage, the treatment is purge, hypertonic enemata and gradual lowering of the spinal pressure, about 25 mm. of water at a time. The spinal pressure in these cases is usually only slightly raised above the normal level of 130 to 150 mm. of water.

During the second stage the above treatment is continued but in addition hypertonic saline or 25% to 50% glucose may be administered intravenously; the usual dosage is 100 cc. of 15% to 30% sodium chloride or 100 cc. of 25% glucose. This may be repeated at intervals of 2 to 4 hours, and the effect of the therapy is measured by the spinal manometer. If after consistent treatment along these lines no improvement results and (or) any signs of periodicity of symptoms show themselves, decompression must be considered. If localizing signs are present the indications are usually clear. The dilatation of one pupil may be the only indication as to which side the lesion belongs.

During the third stage operation becomes imperative, and the chances of recovery are even poor when this is performed. In the absence of available equipment to perform a decompression the methods as previously indicated should be persisted in, and especially the periodical lumbar drainage. In these cases the cerebro-spinal fluid pressure is greatly raised, as high as 300 mm. of water or more. This should be lowered gradually 25 to 50 mm. of water pressure reduction at each tapping. If a spinal manometer is not available the fluid will be seen to spurt out of the needle and the surgeon can only guess the amount of the fluid he should remove.

When the fourth stage is reached the case is hopeless, and no treatment has any effect. It must be remembered, however, that in a case of shock with severe head injury the symptoms may simulate the fourth stage.

Depressed fractures of the vault must, of course, be directly treated, but it is always wise to do a preliminary lumbar puncture to determine the presence or absence of high intercranial pressure. If this cannot be lowered by spinal puncture it may be advisable to delay operation, as the removal of the depressed bone may result in brain injury on account of pressure from within

pushing the brain against the ragged edges of the opening. Even a preliminary sub-temporal decompression may be considered.

The care of other wounds should in general be delayed during the first six to twenty-four hours while the patient is recovering from shock. The application of simple sterile dressings and the arrest of severe haemorrhage is all the care that these wounds should receive.

When haemorrhage, or the escape of cerebro-spinal fluid from one or both ears complicates the case, no attempts at cleansing or washing out of the ear or even examination should be performed. A drop of mercurochrome or 15% argyrol may be painted about the external ear and a loose dressing placed over it, or a sterile towel placed beneath the head, and the head turned to the affected side to promote drainage. It is thought by some that such an opening may act as a decompression, so that drainage should be encouraged rather than prevented.⁶ The danger of a basal meningitis following infection through the auditory canal is a very real one, but the risk of this complication is only increased by meddling examinations or attempts at cleansing. This rule in general holds for nasal or pharyngeal haemorrhage or escape of fluid. Applications of mercurochrome, however, may be introduced into the nose or pharynx. In some cases the eyes require local care, but this should be limited to the use of one of the protein silver preparations during the early stages of the case.

The X-Ray is of little value as an aid to treatment during the early stages of a case, and X-Ray examinations are never indicated while the patient is in a state of shock. When the apparatus is available an X-Ray should always be taken and it may be of aid in localizing the site of the lesion, but in many cases a fracture of the skull, especially of the base, may not show on the plate. In fractures of the vault of the skull the X-Ray may be of invaluable aid especially when there is a question of depressed fracture.⁷

At the beginning of this paper I mentioned that fractures of the skull, of themselves, were usually a secondary consideration. This is the opinion of practically all the recent writers on the subject. Nevertheless, in fractures of the base, valuable information as to the location of the lesion may often be obtained by the thorough examination of the head, including the orbits, nose, naso-pharynx, and auditory canal. Signs of fracture of the anterior, middle and posterior fossae are well known, as for example ecchymosis about the eyes, escape of blood or cerebro-spinal fluid from the nose or pharynx in fractures of the anterior fossa; blood or cerebro-spinal fluid from the ears in fractures of the middle fossa; and the haematoma sometimes seen in the occipital region in fractures of the posterior fossa. Injury to the cranial nerves as they pass through their foramina may give signs which aid in the localization of the fracture. In fractures of the vault, simple or compound, especially when they are depressed fractures must nearly always be attacked directly, but even here it must not be forgotten that the injury to the brain through laceration and haemorrhage, may produce the same train of symptoms that we have already considered. And even in these fractures the program of observation and treatment as already outlined should be carried out.

6. Sharpe, *Neuro-Surgery*, p. 78, 1928—The expectant palliative treatment of these selected patients is frequently aided by profuse bleeding and discharge of cerebro-spinal fluid from the ears or from the nose, extrusion of blood and cerebro-spinal fluid through a fracture of the vault into the tissues of the scalp to form haematomata of varying size and, in selected patients, saline dehydration and repeated lumbar punctures of spinal drainage, so that the intra-cranial pressure is not permitted to reach a height necessitating the cranial operation of decompression and drainage.

7. The value of routine roentgen examination in cases of head injury is admitted but it should be postponed until after the initial period of shock. Such an examination in an unconscious patient may give valuable evidence especially where there are no visible external signs of head injury or when no history is available.—Coleman, 1931.

Historical Section

SOME OBSERVATIONS OF BENJAMIN GOOCH

H. L. SCAMMELL, M. D.

ON October ninth, one thousand seven hundred and seventy-one, Benjamin Gooch, whose name is familiar to every surgeon who sets fractures, was appointed Consulting Surgeon to the Norfolk and Norwich Hospital. In gratitude to the Governors of the Hospital for this signal honor, he "addressed these miscellaneous papers" to them. The "Observations" is a neat little volume containing a considerable amount of unusual matter. Gooch had written a previous work on surgery, (Cases and Remarks in Surgery), and as was usual in those days when a new medical work appeared on the scene, the author was freely corresponded with by all those interested in any form of treatment suggested. In our day, we think of the cause of disease, and from this work out a plan of treatment. Gooch and many of his conferees gave all their attention to treatment, and as he put it, "leaving abstruse matters to more curious investigators", gave little thought to cause. From our standpoint, therefore, besides their interest as medical curios the "Observations" have little value.

There is for all of us a time to learn, and a time to relax from learning, and if we scan the volume in the latter frame of mind there is much to catch our interest. Perhaps for us the most interesting feature is a letter which we shall quote, as printed:

Halifax in Nova-Scotia,

June the 12th, 1768.

Dear Sir,

The pleasure of your acquaintance in London, and the advantages since received by your publication, make me most heartily congratulate you upon the reception it very deservedly meets with in the world: and, having an opportunity of writing by a ship going to England, I could not forbear transmitting an account of the success I have had lately, in a very bad compound Fracture of the leg, by pursuing your method, believing such communication must necessarily prove agreeable to you.

A soldier, aged about thirty, received this accident last January. I was called to him immediately and found it necessary to dilate the wound and saw off between two and three inches of the whole substance of the Tibia much fractured, and the Fibula was fractured obliquely above two inches below the fracture of the Tibia.

The wound was dressed as you direct in your Observations; the whole limb was wrapped up in a poultice, extended upon a pillow, using the tailed bandage and a stiff paper case, with the assistance also of junks, in order to keep it strait and more steady.

By the common treatment of the wound it was perfectly cicatrized in three months, and now, about five months since the accident, the callus is perfectly ossified, the man in good health, the limb useful and well shaped and but very little shorter than the other.

I was very attentive in observing the operation and progress of nature in making good this loss of substance of the bone, and before exfoliations were cast off from the ends, a portion

of the bone being sawn off at each end, granulations appeared like flesh in the intermediate space, gradually becoming bone as you have observed.

The advantages of this practice evidently appear in its support; the free openings and removal of pointed fragments of the bone at first, prevent irritation of the very sensible membranous parts, whence proceed inflammation and abscesses in consequence thereof; and it was very pleasing to others as well as myself, to observe what little complaint the patient made, and how expeditiously the cure was accomplished.

I am persuaded was this rational practice general, few limbs would require amputation on account of splintered bones; and happy would it be indeed, did this method prevail universally in the Army and Navy.

I am with great respect,

Dear Sir,

Your much obliged
humble Servant

CHARLES HALL

Surgeon to the 14th Regiment.

A number of pages of the volume are occupied by an account of the epidemics which occurred in England from 1739-1742. As was usual in those days, their appearance was attributed to the unfavorable weather. The summer of 1739 was very warm. A strange sort of fever was very common from which many died but it is impossible from the description to guess what fever it may have been. One of the cases described is not unlike the description of Bubonic Plague. But after a summer of heat and depression came a winter of the opposite nature which Gooch described very feelingly, as follows: "The frost began on Christmas Eve, ushered in by the most piercing north-east wind I ever felt. It proved very severe the following night and next morning the hedges and trees were covered to an extraordinary thickness with hoariness like snow". It remained extremely cold during the winter and late spring and on the 4th of May there was a fall of snow mixed with hail and rain. As soon as the weather became warmer, the usual outcrop of pleurisy and pneumonia followed, but apparently what attracted the attention of the author most was an outbreak of "a fever accompanied with a tumor of the face of such a kind as I never had seen or read any description of, vulgarly called the MUMPS". There follows a fair description of this now common disease. He remarks that none of them died, that the Parotitis rarely suppurred and that they "healed kindly by the common treatment". This "common treatment" consisted in the use of bleeding, purging and nitrous medicines. Secondary Orchitis is likewise described and the observation made that this was cured with much more difficulty. The disease disappeared in the year 1741.

Another long communication from a friend gives an account of his travels in detail and on reaching Paris the traveller remarks, "the surgeons are excellent and dexterous operators and in general men of learning; but I cannot approve their practice of applying to the wounds immediately after amputations brandy, as ardent spirits obstruct digestion; and from this application I have observed bad consequences". "The Hotel-Dieu, the largest and perhaps the worst built and governed hospital in Europe, is situated near the centre of this great and populous city; into it are annually admitted about twenty thousand patients out of which at least a sixth part generally died. It is not to be wondered that there should be such mortality considering what

numbers are crowded together in bad wards and often four or more in one bad bed; whence the air they breathe must be corrupted to such a degree by effluvia from their morbid bodies as to prove very pestilential". Gooch remarks that, "by an happy accident this hospital has lately been burnt".

As was customary with surgeons in those days, the general surgeon, with the exception of those who practised Ophthalmology, treated every part of the human body. It is not surprising, therefore, that one of Gooch's cases which he describes with much care and evident pride is one of Suppuration in the Maxillary Sinus. On examination he found that the patient had lost all his teeth in the upper jaw adjacent to the sinus and that the underlying pathology was evidently an Osteomyelitis of the superior maxilla at the site of extraction. His first move was "to cut down to the bone on the side with the point of a knife, and bore into the sinus with a "gimblet". This allowed a free evacuation of pus and a canula fitted into the opening aided irrigations which followed thereafter until the patient was cured".

It is quite obvious that an age which knew Syphilis in all its clinical forms at times failed to recognize it. A careful account of a "cancerous ulcer" he describes as "spreading ulcers on the tongue, sides of the mouth, tonsils and fauces". The fact that she had evidently communicated this "cancer" to her husband does not seem to have concerned our author in the least. However, he succeeded in curing her and he cured her by giving her stomachics, a great many dietetic rules to follow, but above everything else, he gave her mercury. The result was a triumph. Her husband, who considered the surgeons of Paris superior to those of England, sought treatment in that City and Gooch remarks with ill-concealed glee, that he died there in about three months. A point arising from this case is interesting in the light of the modern treatment of Cancer: "she had a great many decayed teeth and stumps all of which were extracted to prevent irritation".

The book drifts on from case to case and letter to letter. Some remarkable cases are cited, not the least of which is that of a lunatic who swallowed an iron pin more than five inches long and about two inches in circumference which an active purge succeeded in removing.

Not so successful was the gentleman between 60 and 70 years of age, who had a stone in his bladder, which eventually ulcerated into the rectum from which it was removed surgically, although purging had been first tried, sufficient to render him almost emaciated.

We shall close our review of this rather unusual book by a description of what was evidently a Peripheral Neuritis, but cured in a most extraordinary manner: "A gentleman of the Law in Searjeant's-Inn, aged about fifty, and of a sanguine complexion, was seized about ten years ago with a paralytic affection on his left arm, after which he had severe pain in the second joint of his thumb; from this it runs up to the middle of the cubit, and so on to the middle of the Humerus, gradually increasing to an excruciating degree, and there it stops". The only relief gained by this patient was to employ a "tapper" who tapped him very gently on the seventh cervical vertebra, day and night, with resulting relief. A friend cured him. He did not know the nature of the disease, but he gave him "rattlesnake wine" and he got better. Rattlesnake wine was discovered by a wealthy gentleman in the West Indies about that time, who was thought to be suffering from Leprosy, and therefore, considered incurable. While in this state, he made a will in which he left a large legacy to a female servant. She, learning of this, wished to see his end approach as quickly as possible, and to accomplish this gave him wine to drink into

which she had put the heads of rattlesnakes. Instead of killing her master, the wine cured him. Thinking that Divine Providence had taken a hand in the matter, the wretched woman confessed her crime and, instead of being punished, was substantially rewarded and honorably discharged.

Thus, in a rambling way, we have scanned a few pages from Benjamin Gooch. Compared with other writers of his time, they reveal that Gooch was not, by any means, a master of his art and the very useful splint which he evidently invented and handed down to Medical posterity is a rather notable memorial to a man who apparently, from his works, accomplished very little else.

RESURGAM.

The following lines were written by a confrere at the beginning of the year, while he was recovering from his last operation for gangrenous toes. He is closely approaching the allotted span of life and has experienced rather more than his share of life's misfortunes. We met him last summer and found that reverses had not shattered his ideals nor lessened the kindness which befits so well the cultured gentleman that he is. Perhaps the explanation is to be found in the philosophy of the third stanza of what he would call his rhyming letter. Our readers will join us in wishing for him that "at eventide there may be light"—and peace.—Ed.

Dear Mr.———I've lost another toe, Sir!
I'm shedding toes like leaves in Vallambrosa.
Almost, it would appear that this poor atomy
Is trying to dispose of his anatomy.
Appendix, teeth and toes have all been lifted,
And yards of tubing taken out or shifted.

Great Nelson's flagship, fretting at her chains,
Hath been so oft renewed, that naught remains
Of noble "Victory", (King Phillip's bane),
Which swept the waters of the Spanish Main,
Save the bare hulk. Despite of this the Nation
Finds her a fount of youthful inspiration.

And so, as long as the "machine" keeps working,
Half-speed ahead, but steady, without shirking,
I may, with Help and moderate persistence,
Round out a useful circle of existence;
And then, the wheel full circle and complete,
Lay down the record at the Master's feet.
No carping critic will that record scan;
It will be sponsored by The Son of Man.

And so, the peril passed, our signal clear,
Breast forward, we salute the coming year.

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HEALTH INSURANCE OR FREE MEDICINE?

WE are happy to introduce to our readers this month* Professor L. Richter who comes to us as the author of the article "National Health Insurance in Germany".

Professor Richter who, we understand, is a very valuable acquisition to Dalhousie's German Department, is profoundly interested in the subject of Health Insurance, having had a great deal to do with the shaping of the German system into its present form. Since Germany has had some form of Health Insurance for fifty years and has, by trial and error, effected many modifications and extensions looking to the improvement of the system, it would be reasonable to suppose that they have collected a very large fund of experience. It is from this that Professor Richter speaks and because of which we would be wise to attend him. His article, though given as an address before the Halifax Medical Society at their request, was really prepared for our readers at the request of the BULLETIN, and we are indebted to him.

Bringing the matter into the realm of practical politics we feel that as a system of Health Insurance the German system has much to recommend it—indeed it appears to be an excellent one from which might come ideas to improve that which is suggested for Canada. But if that system represented their total effort in social medicine it would certainly impress one as being wholly inadequate. By a contributory scheme of insurance it takes care of the health requirements of *certain classes* of people who are employed, but it says nothing of the great numbers that are not contained within those classes—usually people without income. We understand, however, that in those countries where Health Insurance systems operate the poorer classes are taken care of by some other arrangement. In this country though there may be much truth in the oft-repeated statement that the very poor and the well-to-do are well taken care of, there is much that is unsatisfactory. We are awakening to our needs but the room for development is immeasurable.

* * * * *

Talk of a changing world has now become so trite as almost to deter us from discussing it; yet, since we are in the midst of, or at least on the fringe of, a greatly accelerated social evolution we must have regard for the changes

* Written for last month's BULLETIN but held back to give place to the editorial on Tuberculosis by Dr. A. F. Miller.

by which we see it express itself. But yesterday medicine was an autocratic, more or less private, individualistic profession. To-day we see, in some directions, an arrangement—an agreement maybe, or, under a dictatorial government, an enslavement—in a system of Health Insurance. In Canada, where that does not yet obtain, the position of Medicine in this social evolution confronts us as a great problem pressing for solution. Health Insurance, which very properly is coming to the fore, is a step towards its solution, and may be made to suffice for the present, but is Health Insurance the last word? Or do we already see on the threshold of the morrow a larger all-embracing and more equitable scheme? Dr. Sproul, President of the University of California, addressing the American College of Surgeons at San Francisco, drew a rough but most interesting parallel between Medicine of to-day and Education at the opening of the nineteenth century. He showed that at that time Education was restricted to those who could pay for it and to such interesting charity cases as individual teachers might care to accept. He showed the reaction when a few radicals "marched into that Utiopa" with the suggestion that schools should be open to the public, and reproduced many of the arguments which the Jeremiahs of the day had adduced. He showed how it took seventy-five years for the public schools to work out their destiny and added: "But if it had taken ten times that long, the principle upon which they were founded would have been worth the struggle."

The parallel is now suggested. He finds that Medicine has done its best to spread its benefits as widely as possible, but yet, in a survey of 19,000 families recently made by the California Medical Association, it was found that only 58% of the people who need medical attention actually receive it, and that because of the fact that 55% had incomes that could not provide it. He then finds a cynic among these and puts into his mouth the following question, which he leaves to his hearers to answer:—

*"If Education is considered a social necessity to be provided without cost, why not medical care? Is learning more important than health?"**

This is a challenge which, though of course not new, still almost staggers the imagination. It is one of which we shall probably not live to see the end but, though our problem may differ very markedly from California's, is one which demands our attention, if we believe in Christian democracy. (If some of our readers prefer "social" to "Christian" we have no objection, seeing no difference). It may be that to emerge from our state of *laissez faire*, to develop positive views upon the subject and to express them, is our present quota to its evolution. Perhaps, too we can be helped in contributing that by further reference to the parallel or to what might well become the parallel:—

"Those who fought for free schools did not allow themselves to be deterred by the darkness and dangers of an uncharted path which they had to follow. They established an ideal and took the hurdles as they came."

But are we among those who would fight for free Medicine, or is it too idealistic for us? Let us leave that question side by side with Dr. Sproul's pregnant and appealing conclusion:—

"We have sought to build a civilization of comfort, opportunity and stability. In part we have succeeded, in part we have merely paved the way for domination by money, machines and power. But given life and health and

* The italics throughout are ours!

a modicum more of intelligence Man will yet subdue these to human needs and human progress. In the coming struggle he is counting on you, surgeons and physicians to his bodily health—with which, too, his mental and spiritual health is so mysteriously entangled. He counts on you to make him fit, to clear from his climbing feet the hazards of disease and to free his straining back from the impediments of crippling weakness. Yours is a vital role in a vital, human relationship; truly, you are your brother's keeper."

* * * * *

An attempt to bring this matter into the realm of practical politics has brought us rather into what will be called the illimitable heights of idealism, nor are we ready to agree that that is a paradox, since it is through flights into the realm of idealism that Man receives the inspiration which makes for progress in his upward climb.

We must take care, however, to keep our feet on the ground, lest our idealistic souls carry us too far into the rarefied strata of unreality from which sooner or later we come back with a sickening thud. One staying piece of ballast is to be found in *Saturday Night* of January 4th in an article by K. J. Cox in which he surveyed the professions of Canada from the point of view of overcrowding.

He shows that the overcrowding in Medicine has produced a decline in the doctors of Canada during the last 10 years of 3%—from 99 per 100,000 to 96 per 100,000 while in U. S. A. the situation is even worse. On the basis of this, and estimating the needs for,—(a) The replacement of the wear and tear among medical men, and (b) The increase due to growth of population, it is calculated that during the next ten years we shall require twenty-eight hundred new doctors. A survey shows three thousand students in our Medical Schools to-day which, with generous allowances for "flunking", etc., will give us four thousand new doctors in ten years—twelve hundred too many, an excess of one hundred and twenty a year.

But the part of the survey that is most important at the moment is his consideration of how that excess would be taken care of by State Medicine. He shows that in the Saskatchewan centres where this has been tried it has been found that one doctor can handle two to three thousand people and he concludes that if this form of State Medicine is adopted for Canada, on the basis of one doctor for every two thousand of population, we should need only five thousand doctors where to-day we have ten thousand! This, obviously, provides a situation which will need adjusting, and which will be difficult of adjustment under our present system.

* * * * *

Those who look forward to Medicine as being free as Education, will doubtless regard such difficulties as constituting part of "the darkness and dangers of their uncharted path", in the negotiating of which they will have Father Time, as a formidable ally; and though they will probably require a great deal of his product, if our civilization is preserved and if current trends mean anything, they can probably be certain of the outcome. The wheels of the Gods grind slowly!

CASE REPORTS

A CASE OF SPASMODIC TORTICOLLIS.

For five years a healthy adult male had complained of an uncontrollable twitching of the head and neck. The condition was becoming progressively worse, and various forms of medical, psychotherapeutic and orthopaedic treatment had been tried, with no lasting benefit. The patient when first seen by me was extremely nervous and agitated, and had had to give up his work.

On examination it was found that he was suffering from quite a moderate degree of torticollis. This was unilateral, and spasmodic in type. While engaged in conversation the head would turn with great force and suddenness to the left in spasmodic jerks; there was twitching of the face muscles, and involuntary movement of the shoulders. These sudden, jerking movements of the head and neck were described by the patient as being painful. The neck muscles were overdeveloped, and particularly the right sternomastoid was felt to be strongly contracted during these spasms.

An operation was performed with a view to paralyzing the affected muscles. Through an eight inch incision extending downwards from the level of the external occipital protuberance, to the left of the midline, dissection was performed to expose the posterior primary divisions of the upper cervical nerves. The trapezius and splenius were divided in the line of the incision undermined and retracted. The longissimus capitis was retracted laterally with the splenius. Lying beneath these muscles the semi-spinalis capitis was exposed and split in a vertical direction to expose the semi-spinalis cervicis in the lower part of the wound. This was the landmark for the cervical nerves which were exposed passing backwards between the transverse processes of the vertebrae at the lateral border of the muscle.

In the upper part of the wound the greater occipital nerve was seen turning upward below the lower border of inferior oblique. An attempt was made to trace its communication to the suboccipital (1st) nerve lying on the arch of the atlas, but considerable venous bleeding rendered this impossible. This was disappointing as it was felt that the severance of the 1st cervical nerve was important. In order to compensate for this failure, the inferior oblique, and rectus capitis posterior major muscles were divided. After dividing the longissimus capitis, the 2nd, 3rd and 4th cervical nerves (posterior primary divisions) were dissected, and about one inch of each removed. In closing the wound the divided splenius was purposely not united.

The head and neck were placed in the overcorrected position, that is, turned to the right, in a plaster of paris cast for a fortnight. At the end of that time, the wound having healed soundly, the right accessory nerve was divided, and its proximal end reversed, at its entrance to the sternomastoid.

A short period of eighteen months has elapsed since the operation, and the patient is greatly improved in every way, particularly in his mental outlook. I have been following his progress with care, eager to note any sign of recurrence. Up to date he has been absolutely free from spasm. There is some stiffness of the neck, and loss of rotating power.

Comment. It is undecided whether this condition be psychogenic or organic in nature. In this case, favouring the former mode of origin, it may be stated that its onset followed a period of great mental stress. Although in recent years the favoured procedure is that of dividing the motor (and sometimes sensory) roots intradurally, following a cervical laminectomy, in addition to the intradural division of the spinal accessory on both sides, the less radical operation was followed in this case, chiefly because of the short duration of the illness and its unilateral nature.

Recurrences following operative procedure have been known after thirty years, and I realise that in this instance it is much too soon to consider a cure. However, the patient is convinced that the benefit during this short interval has more than justified the operations, and would eagerly undergo further operative treatment, should the condition recur.

It may be pertinent to note that at the outset the patient was convinced in his own mind that his only remedy lay in an operation. I have sometimes wondered if this may not well have been a psychic cure.

J. A. NOBLE.

FAECAL IMPACTION.

J. B., a man of 49 years was admitted to Ward 42, V. G. H. in the early morning, Jan. 31st, 1936; an ambulance case. Complaints were, (1) pain in the rectum; (2) abdomen full of gas; (3) constipation. Family history was negative. Personal history revealed no operations, accidents or previous serious illnesses. One year ago he consulted a doctor for epigastric pain and gaseous eructations of post-prandial nature. He was advised that he had a gastric ulcer and was put on Sippi diet. Symptoms still persist to a lesser degree.

Present Illness. For 20 years past he has been chronically constipated, needing strong laxatives to produce defaecation. He also takes large quantities of bran. For the past week the constipation has been most severe, stools being few, hard and small. He had a bowel movement on the morning before admission. That evening (Jan. 30th) he was seized with severe pain which he described as "spasms of cramps in the back passage." With this was the urge to defaecate which was unproductive. Pain became more intense and he had been given morphia gr. 1/3 by his physician before admission.

The man is well nourished, of good color. Temperature is 100.8 F., pulse 94. Physical examination is essentially negative except for the abdomen. This presents a moderate degree of distension and is tympanitic to percussion. The caecum may be seen standing out as a sausage shaped mass in which peristaltic waves pass irregularly. On palpation caecum and abdomen as a whole suggest gaseous distension. No hard masses are felt. There is no tenderness. Auscultation reveals borborygmis of normal force and frequency over the whole abdomen.

On digital examination the rectum is felt to be distended with uniform, soft faeces of sand-like consistence. The examination causes reflex spasm resulting in severe pain.

Urinalysis showed a one plus sugar and acetone, a trace. Blood findings: Red cells, 4, 600, 000; White cells; 9, 800; Haemo. 65%.

Olive oil installations followed by glycerine and magnesium sulphate enemata repeated throughout Jan. 31st and Feb. 1st, supplemented by digital evacuations resulted in large defaecations composed to a great extent of bran.

W. B., a man aged 55, was admitted to the Halifax Infirmary, Nov. 4th, 1934. He complained of constipation. Personal and family histories were negative.

The patient has been in good health. Defaecation had been a regular, daily event, without effort or discomfort and without the use of laxatives until four days ago. Since then the bowels have resisted laxatives and enemata. He has passed small amounts of flatus. There has been no loss of weight or strength.

General facies is normal. Temperature is 99.6F., pulse 88. The abdomen is slightly distended and tympanitic. In the region of the hepatic flexure can be palpated, very vaguely, a hard mass about three inches in diameter. There is no tenderness. Auscultation is normal.

Urinalysis is negative. Erythrocytes are 4,580,000; Leucocytes 8,400. Haemo. 80%. There is no shift in the nuclear count of the neutrophils.

Barium enema reveals a practically complete obstruction at the mid-point of the transverse colon. The bowel is long and atonic below the lesion and greatly dilated as is also the small intestine above the point of the obstruction.

Patient was put on a low residue diet, consisting largely of fruit juices. On the day of admission two soap sud enemata were given, the second returning highly colored with small specks of faecal matter. On the second day the patient was left at absolute rest. On the third day he vomited a small amount of yellowish fluid. An s.s. enema and large (ozXXXII) saline enemata were given. Results were negligible. On the fourth day, i.e. the eighth day from the onset of the obstruction the patient had a large liquid defaecation. Recheck by Barium enema, the following day, showed the colon to be free of obstruction.

The first conclusion which might be based on these two cases is that intestinal obstruction, without marked constitutional disturbances accompanying it, is not an operative emergency. In both cases elevation of temperature seemed to point toward an inflammatory process but this evidence was discredited by the normal leucocyte counts, the Arneth count being of particular significance where the question of low grade infection arises.

In the first case, the long history of constipation, the site of obstruction in the sigmoid or rectum and, particularly, the severe pain made a formidable array on which to fix a diagnosis of volvulus. But there was no shock and cleaning out the rectum soon settled the matter. It is interesting to note that bran, so often recommended as a substitute for more harmful pharmaceutical agents, was the chief component of the impaction. It is very questionable whether the whip-like mechanical stimulation of waste roughage, such as bran, is to be preferred to the more subtle aloin or strychnia.

The picture of the second case was characteristic of a rapidly constricting malignancy. X-rays, following barium enema, were very suggestive. It was felt that while the patient's general condition was so good, there could be little danger in waiting and watching, a policy which saved the patient a needless laparotomy.

ARTHUR L. MURPHY, M.D.

SEPTIC MENINGITIS.

F. L., Male. Age 22. Occupation, labourer. Admitted Dec. 2nd, 1935.

Complaint. Swelling behind right ear.

Family History. Parents living and well. Three sisters and two brothers living and well. No history of tuberculosis or hereditary disease.

Personal History. Measles, mumps and whooping cough in childhood. No serious illnesses or accidents. Does not have colds or sore throats frequently.

Present Illness. About seventeen years ago patient had influenza and ever since then there has been a discharge of thin yellowish material from the right ear. About July 1st, 1935 he contracted a severe cold in his chest which kept him in bed steadily until August 1st, 1935, when the right side of his head became stiff and sore and he was operated on for acute mastoiditis on August 4th. He made an apparently good recovery from the first operation until August 14th when he had a severe chill and on August 15th he had an operation for Lateral Sinus Thrombosis. Incision was made over the jugular vein on the right side. The incision continued to discharge pus for about six weeks then healed up completely.

The mastoid incision healed well except for a small lump which formed about October 1st. This swelling looked like a boil but was not painful or tender. His doctor inserted a needle but did not obtain pus. It was opened about seventeen days before admission but no pus was obtained, only blood. The incision was closed with sutures but these did not hold. The right ear on admission was still discharging but only moderately. Otherwise he has no complaints, feels fine and has no pain.

General Physical Examination. A male of about stated age. Well developed, well nourished, colour somewhat below par.

Physical examination negative except for the right ear and the right mastoid region and several carious teeth.

Right Ear. A greenish yellow discharge from the right ear.

Right Mastoid Region. There is a mastoid incision scar in the centre of which, and directly behind the ear, is a localized swelling. The swelling is about the size of a grape and almost spherical in shape. Its margin at the base is sharply demarcated from the scar. Dark reddish in appearance, covered with a greenish yellow crust which can be lifted off, leaving a reddish surface with all the appearances of granulation tissue. There is no discharge from any point.

On palpation it has a doughy fluctuant feel, not tender and not firmly fixed in position.

Progress Notes:

December 2nd, admitted. Seen by Dr. Doull.

Dec. 3rd. Consultation with Dr. H. K. MacDonald. Biopsy of growth. On sectioning the tumour, thin pus was discharged from several small openings.

Report. The gross and histological appearances are those of a chronic inflammatory and suppurative condition with simple granulation tissue formation.

December 12th. Growth removed by Dr. MacDonald. The tumour came away without any cutting and its gross appearance suggested brain tissue. Haemorrhage was profuse, requiring packing to control it.

Pathologist's Report. The outer mass has the characters of a simple granulation tissue. The rest of the section reveals infected and necrotic cerebellar tissue. No evidence of tuberculosis or malignancy.

December 13th. Temperature at 3 p.m. was 102F. and 101.8 at 7 p.m. He complained of pain in the back of the neck, photophobia and headache. Neither Kernig's or Brudzinski's signs were present at this stage. Leucocytes 20,000.

December 14th. Patient complaining of less actual discomfort and condition seemed somewhat improved.

December 15th. Clinical picture quite typical of septic meningitis. Lumbar puncture done. Pressure 375 mm. of water, reduced to 300 mm.

Report on Spinal Fluid:

Appearance: Turbid.

Cell count: approximately 1400.

Protein: 140 mg. per 100 ml.

Copper Reduction: slow.

Chlorides: 620 mg. per 100 ml.

Lange Curve: 0000122211.

Kahn Test: negative.

Red Blood Cells: fairly numerous.

Smears showed abundant pus cells, both polymorphs, and lymphocytes.

No organisms of any kind seen.

Culture showed a profuse growth of *Staphylococcus aureus*.

Scarlet Fever Antitoxin 10 cc. given intramuscularly.

December 18th. 10 cc. Scarlet Fever antitoxin repeated. Temp. 102. Condition fair.

December 20th. Daily administration of Scarlet Fever antitoxin begun. 10 cc. I.M. Lumbar puncture gave a pressure of 425 mm. of water.

Report on Spinal Fluid:

Appearance: cloudy with clot.

Cell Count: over 1600.

Protein: 130 mg. per 100 ml.

Copper Reduction: normal.

Chlorides: 660 mg. per 100 ml.

Lange curves: 0000111000.

R.B.C.: very few.

Cells are about 60% polynuclears. A rare staphylococcus seen.

December 21st. S. F. antitoxin daily. Temp. a little lower. Somewhat more comfortable.

December 22nd. Temp. continues to fall. Feels much more comfortable.

December 23rd. No headache, stiffness of neck, photophobia, etc. Eating well, bowels moving, improving.

December 26th. Scarlet Fever antitoxin discontinued.

December 28th. Lumbar puncture done. Pressure 425. Fluid almost clear. Pressure reduced to 280.

Report on Spinal Fluid:

Appearance: clear.
Cell count: approximately 600.
Protein: 120 mg. per 100 ml.
Copper reduction: normal.
Chlorides: 690 mg. per 100 ml.
Lange curve: 1112233322.
Red blood cells: a few.

Smears showed both polymorphs and lymphocytes. No organisms of any kind seen.

December 30th. Temperature settling down to normal.

January 8th. Recovery from the meningitis apparently complete.

January 15th. Granuloma re-appearing in the mastoid wound. Has similar appearance to that first seen.

January 25th. Granuloma apparently stopped its growth and has now begun to get smaller in size.

January 31st. Presented at the staff conference and recommendations were that nothing else be done at present, but that he be allowed to return home under observation and to return should the tumour begin to grow abnormally large.

On discharge the mass was about the size of a large bean, situated at the lower edge of the mastoid incision, smooth in contour, and reddish gray in appearance.

Comments. Mass behind the ear was deceiving in that it did not look like cerebellar tissue, it did not pulsate, and the biopsy revealed only granulation tissue. This shows the importance in biopsy work of getting a good, deep section if possible, for I am certain had we gone deep enough we would have gotten some cerebellar tissue and probably no attempt would have been made to remove it in a surgical way. At operation the usual aseptic precautions were taken and the lump came away as a macerated mass requiring no cutting or curetting and was followed by so severe a haemorrhage that I was afraid the lateral sinus had been opened. The severity of the onset and the severity of the course of the septic meningitis which developed was most striking as the laboratory findings show and the prognosis looked extremely bad. In spite of the fact that the culture gave a growth of staphylococcus aureus, after consultation and because of the fact that we had seen marked improvement in other septic conditions where the staphylococcus aureus was the prevailing organism, we decided to use scarlet fever antitoxin, and the further course of the case seemed to justify the procedure, for within a very few days patient began to improve and went on to complete recovery.

I regret through some misunderstanding a lumbar puncture with a report of the spinal fluid just previous to his discharge was not made.

H. K. MACDONALD.

A CASE OF GENERAL PERITONITIS.

Mr. L. B., age 32 years.

Admitted to hospital September 6th, 1935.

The history of this case was that one week before admission he developed crampy abdominal pain, of moderate severity, lasting for about twenty-four hours, and then gradually subsiding. For the remainder of the week he was

quite comfortable—no history of pain, but he did perspire somewhat suggesting fever and he also had a mild diarrhoea. Six days after the onset of his original attack, he suddenly was seized with very severe generalized abdominal pain which persisted and was present on admission to hospital.

Examination on admission showed the patient to be markedly shocked—Blood pressure systolic 70, diastolic not obtainable, radial pulse imperceptible, trunk and extremities cold and clammy. The abdomen presented the clinical signs of generalized peritonitis. Rectal examination was negative. Consultation was held with several members of the Surgical Staff and it was generally felt that any operative procedure would be fatal, and his only chance, he being considered moribund, was to give his own peritoneum an opportunity to combat the severe infection. He, accordingly, was given intravenous fluids, Morphia in generous quantities and placed in moderate Fowler position. The following day there was slight improvement in his circulation and this improvement continued within the following days. Five days after admission, a mass was palpable in his *left* lower quadrant and it was felt that it should be allowed to localize well before opening the abscess. About four days later the patient felt something "give way" in his left side and soon after there was marked swelling of the left side of his scrotum, with signs of inflammation; and coincidental with this occurrence, the left sided mass disappeared. An abscess developed in the left scrotum and inguinal canal which was opened below the external ring and in the scrotum. Pus flowed freely through the inguinal canal. A few days later a faecal fistula developed and the discharge had the characteristics of small bowel contents. This lasted about two weeks accompanied by the usual digestion of the skin, loss of strength and nutrition. Five hundred cc.'s of whole blood given intravenously resulted in very marked improvement and he was able to be discharged about two weeks later.

After ten days, however, he returned again with the clinical signs of intestinal obstruction. Laparotomy was performed and several adhesions causing obstruction of the terminal ileum in the right iliac fossa, were freed. The appendix was not seen and his condition did not warrant a lengthy operative procedure; consequently, an enterostomy of the Witzell type, proximal to the obstructed area, was done. His recovery from this procedure was rapid and he was discharged fifteen days after operation.

Summary. From the course of events our conclusions were as follows: The original onset of acute Appendicitis with rupture and abscess formation probably pelvic—remembering the diarrhoea during his first week of illness. Subsequent general peritonitis from rupture or spread of this infection. Localization of abscess in left lower quadrant and rupture into the inguinal canal possibly into a preformed existing hernial sac, and the formation of an abscess there which was subsequently incised. The development of intestinal obstruction is, of course, not unusual after such an infection.

It is the intention to have this patient return at a later date for Appendectomy.

Conclusions. This case, perhaps, should emphasize the principle that many late cases of Peritonitis from Appendicitis should not be operated upon immediately but given an opportunity to localize such infection so that subsequent operative procedures offer a much better chance of recovery.

LOCAL ANAESTHESIA FOR RADICAL MASTECTOMY.

In these days of new anaesthetics, general, intra-spinal, intra-venous, local and basal, the value of some of the older ones or older combinations might again be re-stated.

The following case illustrates the value of the novocaine-paraldehyde combination which seems to give particularly happy results in old, poor-risk subjects.

Mrs. B., age 74. Admitted Victoria General Hospital, Jan. 6th.

Complaint. Lump in right breast.

History. First noticed the lump in June, 1935, when it was the size of a large bean. Since then it has steadily increased in size. There was some pain in the breast in July, and since then the right axilla and back of the shoulder were at times painful. This pain, however, was relieved by ginger tea.

Examination. Showed a greatly bewrinkled old lady looking older than given age, showing evidence of very considerable loss of weight and extreme dehydration. Cerebration had slowed down and the pulse was small and weak.

The Breast presented a mass in the inner upper quadrant, measuring approximately 5 x 6 x 3 cm. attached intimately to the skin but not to the subjacent structures. The glands in the anterior fold of the axilla were enlarged to the size of beans; none could be felt in apex of axilla and there was no supra-clavicular involvement. The glands were moderately soft and tender. X-ray of chest showed evidence of old disease but no metastasis.

Our decision was that she should be brought into as good a condition as possible, be irradiated, and if her condition then warranted, have a radical mastectomy performed and further irradiation given.

Forced intra-oral fluids and intra-venous glucose-saline solutions were employed for several days. Under this treatment she improved markedly. Her pulse became better, skin filled out somewhat and definitely softened, tissue turgor approached the normal and it was then felt that the question of operation could safely be raised. It was obvious that for her the kind of anaesthetic was an important question. Inhalation anaesthetics were ruled out because of her general condition, intra-venous was out of the question for an operation of that magnitude. Spinal from the root of the neck down is not desirable for old people and not without danger for anyone. Basal and Local? Yes! but what basal? Avertin? Nembutal? These are the common ones but they are undesirably depressing to elderly people and increase the risk.

Our decision was to use local and a basal. For the former novocaine-adrenalin, and for the latter paraldehyde.

January 14th, 1936. The paraldehyde was given a full half hour before the operation five drachms in $2\frac{1}{2}$ oz. water per rectum. (Four drachms would have done this patient very well, for she came to the table sound asleep and did not awaken until long after the operation was completed. Our last case, a man of 81 with a strangulated complete hernia got along all right with three drachms but four would have been better).

At operation the brachial plexus was first blocked, then the intercostal nerves and finally the operative area was mapped out with a line of skin and subcutaneous infiltration constituting a partial field block, to take care chiefly

of the innervation about the sternum from the opposite side. In only one small area, at the lower converging sides of the skin ellipse did any sensation of pain appear to register. Two intercostals giving the main supply to that area were re-injected to correct this. (I had been using very small amounts of novocaine solution in the nerve-blocking). When we returned to this area no further sensation was apparent.

The usual radical mastectomy was done with the dissection of the axilla and with removal of the pectorals, parts of the serratus, the fascia over the upper end of the rectus abdominis, etc. The apex of the axilla showed small, soft and definitely malignant lymph nodes. The skin had been sufficiently undercut at first to admit of closing with little tension and this was effected with S.W. gut and clips.

The patient had no knowledge that an operation was being performed for that evening, while a nurse was giving her some attention, she asked when she was going to have her operation. Her general condition was excellent throughout her convalescence and healing was by first intention. She has now completed her irradiation and was discharged on February 5th, 1936, feeling fine.

Path. Report. Breast and axillary glands are extensively infiltrated with a typical spheroidal celled carcinoma of the scirrhous type.

N. H. G.

THE SCHOOL-CHILD'S BREAKFAST.

Many a child is scolded for dullness when he should be treated for under-nourishment. In hundreds of homes a "continental" breakfast of a roll and coffee is the rule. If, day after day, a child breaks the night's fast of twelve hours on this scant fare, small wonder that he is listless, nervous, or stupid at school. A happy solution to the problem is Pablum, Mead's Cereal cooked and dried. Six times richer than fluid milk in calcium, ten times higher than spinach in iron, and abundant in vitamins B and G, Pablum furnishes protective factors especially needed by the school-child. The ease with which Pablum can be prepared enlists the mother's co-operation in serving a nutritious breakfast. This palatable cereal requires no further cooking and can be prepared simply by adding milk or water of any desired temperature. Its nutritional value is attested in studies by Crimm *et al* who found that tuberculous children receiving supplements of Pablum showed greater weight-gain, greater increase in hemoglobin, and higher serum-calcium values than a control group fed farina.

Mead Johnson & Company of Canada, Ltd., Belleville, Ont., Canada will supply reprints on request of physicians.

Federation with the Canadian Medical Association

THE Committee appointed by the Medical Society of Nova Scotia in July, 1935, for the purpose of studying the Federation scheme, wish to place before the membership of the Society something in the nature of a progress report.

This Committee consists, it will be remembered, of five members resident in Halifax, and the President of each Branch Society. It is regretted that attendance of the Branch Presidents has not often been feasible, but plans are afoot for the securing of their counsel in the near future.

The Committee has been making an effort to clarify the problem, and to get it into definite shape for presentation to the various Branches, and to the members at large. The intention is to ask for a widespread expression of opinion, for the guidance of the Committee in formulating its final report.

A general statement of the federation scheme was given in the columns of the BULLETIN in August, 1935. At that time expression of views from the members was requested. The response has not been such as to indicate particularly keen interest in this matter on the part of the profession.

Supplementing that general statement, the Committee now wish to submit a somewhat more detailed survey of the scheme, with special reference to its applicability in Nova Scotia.

General Outlook.

- (a) There are 420 Doctors now in practice in Nova Scotia.
- (b) There are 233 members of the Medical Society of Nova Scotia.
- (c) Of these 114 are members of the C. M. A. as well.
- (d) 119 are members of the Medical Society of Nova Scotia alone.
- (e) 16 are members of the C. M. A. alone.
- (f) 171 belong to no Medical Society.

Section (c)	members	pay	\$20.00	a year.
“ (d)	“	“	\$10.00	“
“ (e)	“	“	\$10.00	“
“ (f)	“	“	\$00.00	“

Proposal Under Federation Scheme.

That Section (d) members join with Section (c) making the annual fee \$18.00 for all with membership in both Federal and Provincial organizations. That following Federation no new members be accepted under Section (d), it being understood that Provincial membership implies Federal also, with an increase of \$8.00 in the yearly fee.

That, therefore, members of Section (c) shall have their membership fee reduced \$2.00 per year, and those of Section (d) shall have their membership fee increased by \$8.00 per year.

That members of Section (e) may continue their present membership in the federal Association.

That present non-members of either or both organizations can come in only under Section (c) or Section (e).

Advantages of Federation.

1. We lose none of our present Home Rule. Our relations to the Provincial Medical Board, our Provincial Constitution, our Branch Societies and all other activities, as we know and practice them now, remain fundamentally unchanged.
2. As a Division of the Federal organization we can not only speak for our Provincial rights, but we shall help mould and support the bigger policy of a Dominion wide medical profession.
3. There is abundant evidence that we are near great changes in the economic and professional relations of our doctors and our country's government. When these changes are proposed they are likely to be of federal government origin, and we should meet them, for good or ill, with the voice of a profession united from coast to coast.
4. Our country is Canada: our patriotism is Canadian, our profession, as a spiritual and scientific force, and as a corporate entity, should represent Canadianism at its best.
5. Of our 420 practising Doctors in Nova Scotia, every one gets at least one medical journal. Why should it not be the *Canadian Medical Association Journal*? It is equal to the best; it is our own, and the proposed \$8.00, under the federal plan, will give us the Journal and membership in the Canadian Association as well. A Journal of such internationally recognized merits would cost more than eight dollars a year for subscription alone.

Alleged Disadvantages of Federation.

Doctors who belong to the Provincial Society alone would, under the federal plan, have to pay eight dollars more than at present, in order to become members of the Canadian Association and retain their membership in the Provincial.

What do they get for the extra eight dollars? The answer is, the *Canadian Medical Association Journal* and the advantages, some of which we have pointed out, of belonging and functioning in a strong national organization.

It is the earnest desire of the Committee that this question should be carefully studied. The various Branches will be asked at an early date through their Presidents, for an expression of opinion, and eventually a questionnaire will be sent to every practitioner in the Province. The returns from this questionnaire will necessarily determine to a great extent the nature of the final report of this Committee.

Committee:—G. H. Murphy; K. A. MacKenzie; G. R. Burns; H. B. Atlee; J. R. Corston, (chairman).

Department of the Public Health

PROVINCE OF NOVA SCOTIA

Office—Metropole Building, Hollis Street, Halifax, N. S.

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Chief Health Officer - - - - DR. P. S. CAMPBELL, Halifax.
Divisional Medical Health Officer - - DR. C. M. BAYNE, Sydney.
Divisional Medical Health Officer - - DR. J. J. MACRITCHIE, Halifax.
Director of Public Health Laboratory - - DR. D. J. MACKENZIE, Halifax.
Pathologist - - - - DR. R. P. SMITH, Halifax.
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 Kelley, H. E., Middleton (County & Town).

Murray, R. L., North Sydney.
 Townsend, H. J., Louisburg.
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 (Co. North Side.)

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Cameron, J. J., Antigonish (County).
 MacKinnon, W. F., Antigonish.

COLCHESTER COUNTY

Eaton, F. F., Truro.
 Havey, H. B., Stewiacke.
 Johnston, T. R., Great Village (County)

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Densmore, F. T., Dominion.
 Morrison, J. C. New Waterford.
 Johnstone, L. W., Sydney Mines
 McNeil, J. R., Glace Bay.
 McLeod, J. K., Sydney.
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 Hill, F. L., Parrsboro.
 Eaton, R. B., River Hebert (Joggins).
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McCleave, J. R., Digby.
Rice, F. E., Sandy Cove (Mcpy).
Belliveau, P. E., Meteghan. Clare Mcpy.

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(Mulgrave).
Sodero, G. W., Guysboro (Mcpy).
Moore, E. F., Canso.
Monaghan, T. T., Sherbrooke (St. Mary's
Mcpy).

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Almon, W. B., Halifax.
Forrest, W. D., Halifax (County).
Glenister, E. I., Dartmouth.

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Bissett, E. E., Windsor.
MacLellan, R. A., Rawdon Gold Mines
(East Hants Mcpy).
Reid, A. R., Windsor (West Hants Mcpy).
Shankel, F. R., Windsor (Hantsport).

INVERNESS COUNTY

MacLeod, J. R., Port Hawkesbury
Chisholm, D. M., Port Hood.
Chisholm, M., Margaree Harbour (County).
Ratchford, H. A., Inverness.

KINGS COUNTY

Bishop, B. S., Kentville.
Bethune, R. O., Berwick (Co. and Town).
deWitt, C. E. A., Wolfville.

LUNENBURG COUNTY

Marcus, S., Bridgewater (Mcpy).
Rehfluss, W. N., Bridgewater.
McKinnon, C. G., Mahone Bay
Zinck, R. C., Lunenburg.
Zwicker, D. W. N., Chester (Chester Mcpy).

PICTOU COUNTY

Crummy, C. B., Trenton.
Blackett, A. E., New Glasgow.
Chisholm, H. D., Springville, (County).
MacMillan, J. L., Westville.
Stramberg, C. W., Trenton.
Sutherland, R. H., Pictou.
Bennie, R. M., Stellarton.

QUEENS COUNTY

Ford, T. R., Liverpool (County).
Hebb, F. J., Liverpool.

RICHMOND COUNTY

Deveau, G. R., Arichat (County).

SHELBURNE COUNTY

Brown, G. W., Clark's Harbour.
Churchill, L. P., Shelburne.
Fuller, L. O., Shelburne.
Banks, H. H., Barrington Passage
(Barrington Mcpy).
Herbin, C. A., Lockeport.

VICTORIA COUNTY

MacMillan, C. L., Baddeck (County).

YARMOUTH COUNTY

Blackadar, R. L., Port Maitland (Mcpy).
Burton, G. V., Yarmouth.
O'Brien, W. C., Wedgeport.
Siddall, A. M., Pubnico (Argyle Mcpy).

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.

Report on Tissues sectioned and examined at the Provincial Pathological Laboratory from January 1, 1936, to February 1, 1936.

During the month, 195 tissues were sectioned and examined, which with 18 tissues from 4 autopsies, makes a total of 213 tissues.

Tumours, malignant.....	29
Tumours, simple.....	19
Tumours, suspicious.....	..
Other conditions.....	147
Tissues from 4 autopsies.....	18

Communicable Diseases Reported by the Medical Health Officers
for the month of January, 1936.

County	Chickenpox	Diphtheria	Infantile Paralysis	Influenza	Measles	Mumps	Paratyphoid	Pneumonia	Scarlet Fever	Typhoid Fever	Tbc. Pulmonary	Tbc.-other Forms	V. D. G.	V. D. S.	Whooping Cough	German Measles	Pink Eye	Erysipelas	TOTAL
Annapolis.....	25	..	..	..	14	1	..	..	..	..	..	..	..	..	33	2	..	..	75
Antigonish.....	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	4
Cape Breton...	4	8	..	..	..	..	..	..	3	..	..	1	..	..	15	2	..	..	33
Colchester.....	1	..	..	2	3	..	..	1	..	..	..	..	..	..	85	5	10	..	107
Cumberland...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Digby.....	..	..	..	..	15	5	..	..	..	..	..	..	..	..	..	..	..	..	20
Guysboro.....	..	..	..	..	1	..	..	..	7	..	..	..	2	2	..	..	..	..	12
Halifax City..	8	12	..	..	107	..	..	..	27	..	4	..	1	..	4	..	..	2	165
Halifax.....	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	3
Hants.....	..	..	..	..	3	..	..	..	2	..	..	..	..	..	..	..	..	..	5
Inverness.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kings.....	..	..	..	8	1	3	..	..	..	..	..	1	..	..	..	2	..	..	15
Lunenburg.....	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Pictou.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Queens.....	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	4
Richmond.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Shelburne.....	..	..	..	..	..	4	..	..	..	..	..	..	..	..	2	..	..	..	6
Victoria.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yarmouth.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
TOTAL.....	38	20	..	10	145	13	..	1	50	..	4	2	3	2	139	11	10	2	450

Positive cases Tbc. reported by D. M. H. O's. 13.

RETURNS VITAL STATISTICS FOR DECEMBER, 1935.

County	Births		Marriages	Deaths		Stillbirths
	M	F		M	F	
Annapolis.....	7	8	13	6	6	1
Antigonish.....	13	16	6	11	15	0
Cape Breton.....	131	123	103	39	31	3
Colchester.....	24	20	19	4	10	3
Cumberland.....	28	21	28	23	17	1
Digby.....	14	16	8	6	3	0
Guysboro.....	14	9	10	4	2	1
Halifax.....	71	76	65	53	44	6
Hants.....	15	21	16	3	4	2
Inverness.....	18	14	6	11	14	0
Kings.....	22	17	15	11	6	1
Lunenburg.....	30	19	33	24	21	2
Pictou.....	32	20	18	16	11	0
Queens.....	10	10	19	5	2	1
Richmond.....	11	11	3	5	6	2
Shelburne.....	13	7	10	5	4	0
Victoria.....	6	5	3	3	3	0
Yarmouth.....	10	15	12	9	5	0
	469	428	387	238	204	23

OBITUARY

Dr. Frederick Ernest Lawlor and Muriel Lawlor, His Wife.

THE late Frederick Ernest Lawlor was born March 10th, 1878. He was the second son of Edward and Isobel (Lyle) Lawlor of Dartmouth, N. S. His father was associated for many years with the firm of John Tobin and Company. His mother was a daughter of Alexander Lyle, Esq., who was a well-known Nova Scotian ship-builder, and who was, in his earlier life, in partnership with Samuel Cunard, the founder of the Cunard Steamship Line.

Dr. Lawlor had one brother, the Rev. Edward Lawlor, of Adamsville, Quebec, who died at that place in 1910. His daughter, Mrs. Edward Rowan, of Pembroke, Ontario, is the late Doctor's nearest surviving relative.

Dr. Lawlor was educated in private schools in Halifax and entered McGill University in 1897. He received his Medical Degree in 1901. Immediately after graduation he was appointed Assistant Physician to the Nova Scotia Hospital for Insane, Dartmouth, and, a few years later, on the death of Dr. McKenzie, he became Assistant Superintendent. In 1911, on the retirement of the late Dr. W. H. Hattie, he was appointed Superintendent and retained that appointment until the spring of 1935 when increasing ill health made it impossible for him to continue his duties there.

In October, 1906, he married Miss Muriel Milliken, daughter of the late Edward and Ellen M. Milliken. Her father died when she was a child and her mother afterwards was married to James C. Fairbanks, of Halifax. After prolonged illness Mrs. Lawlor died January 3rd, 1936, at the Halifax Infirmary where both she and her husband had been patients for some weeks. Dr. and Mrs. Lawlor had no children. After his wife's death and in the hope of improved health Dr. Lawlor sailed for Barbados, but died en route at Bermuda on January 23rd, 1936. He and his wife were buried at Mount Hermon Cemetery, Dartmouth.

In leisure hours the Doctor and Mrs. Lawlor were devoted to the outdoors and spent many of their holidays together on the lakes and streams of the Province and in the pastimes which these afford. They travelled widely in various parts of the world, but I think they preferred the British West Indies above all other places. Throughout their married lives they were inseparable and by Death that union was but for a brief period only, interrupted or broken.

I knew Dr. Lawlor well having been associated with him for about two years on the staff of the Hospital and as an intimate friend for over twenty years since that time. His sympathy for the many patients under his charge, his understanding of their problems and troubles and above all his genuine concern for their comfort and welfare, were outstanding qualities of his stewardship. He was a diffident man and perhaps few, excepting his patients and associated officials, knew the full truth concerning his character and the value of his work. With his passing the sense of personal loss is great, but greater still, by far, is the loss to this Province of one who will long be ranked among her ablest and most devoted servants.

M. G. B.

The BULLETIN regrets to report the death of Dr. J. R. B. MacLeod, of Port Hawkesbury, which occurred from heart failure on January 17th. Dr. MacLeod had previously suffered from symptoms of heart disease but his death came as a decided shock to those who knew him. Dr. MacLeod was a native of Grand River and settled at Port Hawkesbury twenty-five years ago. He then established himself and enjoyed the confidence and esteem of the community. Besides his widow he is survived by one son who is now in his second year at Dalhousie Medical School.

Another great loss to our Society was that of Dr. Ross Livingston Blackadar, of Port Maitland, who passed away on Friday, January 10th. Dr. Blackadar had been suffering from heart disease for some months and on that account had been confined to his home. In the latter part of December he went to the Yarmouth Hospital and was there for some three weeks before he passed away. Dr. Blackadar graduated from Dalhousie University Medical School in 1902, and had practised for many years at Port Maitland. He took an active part in local health matters and served for a time as Municipal Health Officer of Yarmouth. He was sixty-one years of age at the time of his death. He is survived by his wife, one daughter Kathleen and one son Ross of Barton, Digby County; three brothers also survive him. Funeral services were held at the Port Maitland United Church. The pall bearers were Doctors Webster, Farish, Williamson, Burton, Phinney and Morton of Yarmouth.

The news of the death of Dr. Chisholm of Port Hood who passed away the latter part of December was not received until the January edition of the BULLETIN was made up. Dr. Duncan MacIntosh Chisholm, well known and esteemed practitioner of Port Hood, passed away on the evening of December 29th, at the age of eight-three. Dr. Chisholm was born in Antigonish County, in the district of St. Andrews in 1852. He entered St. Francis University and later graduated in Medicine from the University of New York in 1882. In 1887 the Doctor married Elizabeth Walsh, of Guysboro, N. S. He first practised at the Strait of Canso for a short time and then settled in Port Hood where he has been for over fifty years. He is survived by three brothers, four sons and three daughters. Dr. Chisholm will be greatly missed in the community of Port Hood. He was an excellent diagnostician and gave his services freely without consideration of remuneration. His life was filled with good deeds, and he will be long remembered as a faithful and conscientious physician. Dr. Chisholm was an Honorary member of the Medical Society of Nova Scotia.

“Kiss me
goodbye,
darling—



and eat
your apple
on your way
to school.”

MOTHERLY kisses are all right, and so are apples, *but*—

Thousands of little boys and girls are rushed off to school hungry every morning—with a kiss and/or an apple or bun—because insufficient time was allowed for the child's morning meal.

Breakfast, which should form an important foundation for the growing child's eager activities, frequently is a mere snack, hurriedly gulped, so that many a child goes to school half-starved. How can a hungry child learn his lessons?

In behalf of tired mothers, it must be said that the long cooking of ordinary cereals is a drudgery, especially if there also be smaller children who break her rest during the night and clamor for attention before dawn. In most cases, the older members of the family lose out at

breakfast time not because the mother is lazy or inconsiderate, but simply because she is exhausted and requires extra rest.

A happy solution of the breakfast problem, one that may even hold the home together during such troublous times, who knows, is PABLUM.

PABLUM banishes over-night and early-morning cereal drudgery, so that mothers can get their deserved rest. At the same time, all members of the family, including the school children, are assured of a quick *nourishing* breakfast.

To prepare PABLUM, simply add milk or water of any temperature, and serve with cream, salt and sugar. If preceded by orange or tomato juice and followed by a glass of milk, and a capsule of Mead's Viosterol in Halibut Liver Oil, such a breakfast fulfills every nutritional requirement: Protein✓ Fat✓ Carbohydrate✓ Vitamins: A, B, C, D, E, G✓✓ Minerals: Calcium, Phosphorus, Iron, Copper, Etc., Etc.✓✓ Calories✓

Pablum (Mead's Cereal pre-cooked) is a palatable cereal consisting of wheatmeal, oatmeal, cornmeal, wheat embryo, alfalfa leaf, beef bone, brewers' yeast, and salt.

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Personal Interest Notes

ON the evening of January 7th a public meeting was held in the City Hall, Halifax, at which a committee representing the Halifax Branch of the Medical Society of Nova Scotia presented a memorial to the Halifax City Board of Health. Dr. J. R. Corston was Chairman of the committee, and with him were Dr. M. J. Carney, Dr. C. S. Morton and Dr. H. B. Atlee. The memorial was a comprehensive one dealing with all phases of public health, and certain subjects were emphasized. The Medical Society suggested that the school nurses in Halifax, at present under the supervision of the School Board, should rightfully come under the supervision of the Board of Health. They recommended that the Health Board advocate immunization against diphtheria with toxoid, and also that the Provincial law dealing with small-pox vaccination be strictly enforced. Certain regulations or ordinances regarding the handling of milk were suggested, although it was agreed that the milk supply of Halifax was very good. The memorial suggested that Halifax increase its staff of paid health workers by employing two nurses, trained in public health, whose duties would be chiefly in connection with infant and maternal welfare, and felt that the Victorian Order of Nurses should be consulted in this respect. They also recommended two public health nurses who would devote their entire time to the question of tuberculosis control. The final recommendation was that the whole Department of Health should be headed up by a fully qualified physician with training and experience in public health, who would act as executive officer to the present Board. The Halifax City Board of Health gave this committee a very friendly reception and promised that they would consider the various recommendations. Besides the representatives of the Halifax Branch of the Medical Society of Nova Scotia there were many others interested in public health present.

Dr. James J. Carroll, of Antigonish, and Miss Mary Elizabeth (Betty) McEachern, R.N., daughter of Mrs. Florence McEachern, Mulgrave, were married at Truro on January 14th. The ceremony was performed in the Church of the Immaculate Conception by the Rev. Father Kinsella. Dr. and Mrs. Carroll journeyed to Boston and from there will return to Antigonish to reside.

Dr. and Mrs. John Denoon of West Africa, were recent guests at the Nova Scotian Hotel, Halifax, having arrived here to spend six months vacation in Canada. Dr. Denoon is well known in Halifax, being a former graduate of Dalhousie University and an I. O. D. E. Scholar. He and his bride have been renewing old friendships and a number of informal functions have been given in their honour. Dr. and Mrs. Denoon spent sometime visiting in Westville, and have gone to Lethbridge where they will visit Dr. Denoon's mother.

Residence of Dr. W. C. Harris, of Barton, Destroyed by Fire.

On Friday evening, January 17th, the residence of Dr. W. C. Harris was totally destroyed by fire. The blaze started about 6.30 p.m. and was noticed

EMMENIN—the orally-active, oestrogenic hormone of the placenta, prepared and biologically standardized in accordance with the technique of Dr. J. B. Collip, Dept. of Biochemistry, McGill University.



"It should be emphasized that Emmenin therapy is essentially safe. In a group of ten cases, Emmenin was administered daily (except during the periods) for several months without disturbing the normal menstrual cycles. . . . The administration of Emmenin does not prevent impregnation nor interfere with gestation."

—*Annals of Internal Medicine*,
Vol. 71, No. 3, Sept., 1933.

IN THE TREATMENT OF DYSMENORRHOEA

Emmenin . . . a valuable form of supplemental hormone therapy

" . . . Our results from the administration of Emmenin have convinced us that it is a valuable form of supplemental hormone therapy, when the pains have a definite origin from forcible uterine contractions . . . "

C.M.A.J., 1935, 32:609

Important findings from the use of Emmenin in the treatment of dysmenorrhoea appeared in the C. M. A. J., June, 1935. A full report of this work, carried out under the Department of Gynaecology, University of Toronto, is now available in reprint form. Copies on request.

Emmenin is offered in original, specially-sealed bottles of four fluid ounces.

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MONTREAL

CANADA

first by some of the neighbours. Efforts were made to quench the fire without success although the furnishings on the ground floor were saved. We believe that the loss was covered to some extent by insurance.

Dr. Carl F. Messenger, of Granville Ferry, has left for New York to continue his medical and surgical work. Following his post-graduate course Dr. Messenger intends to return to Middleton next summer to take up practice.

Dr. Audley Griffin, of the Royal Victoria Hospital, Montreal, recently spent a few days in Kentville renewing acquaintance in town and at the Nova Scotia Sanatorium.

Dr. A. Vance Fraser, son of Professor H. J. Fraser of the Nova Scotia Agricultural College, has been appointed chief resident physician of the St. Vincent Charity Hospital, Cleveland, Ohio, the appointment to be effective next spring. Dr. Fraser is a graduate of the Colchester County Academy and graduated in science and medicine at Dalhousie University. He was on the staff of the Nova Scotia Sanatorium at Kentville for a while following his graduation. He has been on the staff of the St. Vincent Hospital for the past year and a half and is now assistant chief resident physician and surgeon.

Dr. E. M. Curtis, of Truro, was chosen president of the medical staff of the Colchester County Hospital at a meeting held January 9th. Dr. Curtis plans to leave shortly for Kentville to take a special course of instruction in X-ray and chest work.

Professor of Physiology at Dalhousie Appointed.

On January 7th the University of Dalhousie announced the appointment of Dr. C. B. Weld, at present assistant professor of Physiology at the University of Toronto, to succeed Dr. E. W. H. Cruickshank, who recently accepted an appointment at Aberdeen in Scotland. Dr. Weld is a son of Dr. Arcadius Weld, of London, Ontario, and was born in Vancouver in the year 1900. He received his degree in Arts at the University of British Columbia in 1922, and later took the degree of M.A. in Bacteriology. From that time until the present he has had a very extensive and thorough training. In 1922 and 1923 he served as technician at the Vancouver General Hospital laboratory. The following year he spent as research assistant at the Connaught Laboratories, University of Toronto. In the summers of 1926 and 1927 he was research assistant to the Fisheries Experimental Station at Halifax. In 1929 he took the degree of M.D. from the University of Toronto. Following graduation Dr. Weld first served as interne at the Toronto General Hospital, and for the last three years was associated with the Department of Physiology of the University of Toronto. In Physiology he first served as research assistant, then as lecturer and research assistant, and finally as assistant professor. In his work in Physiology he has been intimately associated with Dr. C. H. Best and Dr. N. B. Taylor. Before coming to Dalhousie Dr. Weld is proceeding to London, England, where he will take a short post-graduate course with Dr. C. Lovatt Evans, Head of the Department of Physiology of the University of London, University College, London. He comes to Nova Scotia with the highest recommendations from Dr. C. H. Best and Dr. J. G. Fitzgerald, Dean of the Faculty of Medicine, University of Toronto.

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Samples free on request

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SCILEXOL

(E. B. S.)

AN EFFICIENT RESPIRATORY SEDATIVE.

Scilexol, E. B. S., effectively relieves the hacking cough of Chronic Bronchitis and the troublesome cough affecting many aged patients, without disturbing digestion.

EACH FLUID OUNCE CONTAINS:

Codeine Phosphate.....	1 grain
Ammonium Chloride.....	16 grains
Chloroform.....	2 minims
Acid Hydrocyanic, Dil. B.P.....	4 minims
Syr. Scillae.....	90 minims
Syr. Tolu.....	120 minims

Dose: One to two fluid drachms in a little water, sipped slowly, each three hours until relieved.

Indicated in Asthma, Influenza, General Colds and in Whooping Cough. It softens and aids in the expulsion of the secretions, thus affording relief and rest to the patient.

Also supplied with Heroin Hydrochloride 1/3 grain per ounce, in place of Codeine Phosphate 1 grain, when specified.

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Inoculation of School Children at New Waterford to Immunize Against Diphtheria.

During the first week in January over two hundred and fifty children received the treatment. All of the physicians are giving their services free, and are working under the supervision of Dr. J. C. Morrison, Medical Health Officer. The campaign to protect the children of New Waterford against diphtheria came about on account of a mild epidemic of diphtheria which has been prevalent in New Waterford for some time. The Provincial Department of Health are supplying toxoid free. It is expected that before the campaign is over there will be some two thousand children given toxoid. Besides the doctors there are two nurses employed to help in the campaign.

Congratulations are extended to Dr. and Mrs. A. Ernest Doull, of Halifax, on the birth of a daughter on January 6th, and to Dr. and Mrs. John R. McCleave, of Digby, on the birth of a son (John Graham) also on January 6th.

A letter has been received by the Secretary from Mr. W. J. Foley, of Salmon River, Digby County. Mr. Foley is endeavoring to get a physician to take over the practice of the late Dr. R. L. Blackadar, of Port Maitland, who recently died. Further particulars may be secured from Mr. W. J. Foley, of Salmon River, Digby County.

Pasteur's First Patient.

Joseph Meister, fifty-nine year old helper at the Pasteur Institute in Paris, had a brief day of prestige recently when he stood with scientists to honor Louis Pasteur as the first person ever to submit to inoculation. . . It was half a century since a despairing Alsatian mother surrendered her rabies-infested son to an obscure Parisian chemist fearful that the boy was doomed anyway and reasoning that Pasteur's new fangled notions of inoculation, so sceptically received, were at least worth a trial.

Medal to Hospital.

Signal honor was brought to Canada and to the Royal Victoria Hospital, Montreal through Dr. David W. Mackenzie, director of the department of urology at the institution, who was awarded the silver medal of the American Medical Association for research work he had conducted at the hospital. More than seven hundred hospitals throughout the United States and Canada entered exhibits in the competition and the medal awarded to Dr. Mackenzie was equivalent to the second prize.

New Clinic Ship.

Newfoundland's new "travelling clinic" set out recently on her maiden voyage after being christened by Lady Anderson, wife of Governor Sir David Murray Anderson, who gave the hospital ship her own name. . . The Lady Anderson will operate along the southwest coast, travelling between "cottage hospitals" which the government proposes erecting. Between ship and the hospitals adequate medical service is expected to be provided for outporters, usually without it in the winter.



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PATENT AND PROPRIETARY MEDICINES.

Canadians spend fifty million dollars yearly in patent and proprietary medicines. Our share of this gigantic expenditure in Nova Scotia runs in the vicinity of two and a half millions of dollars. With our population of a little over half a million it means that every man, woman and child in our province on an average pays something over four dollars each. In other words, Nova Scotians pay out during the year to store keepers, pedlars, mail orders and through whatever channels or agencies un-prescribed drugs may be obtained, under our laws, an amazing sum of money.

Remember this drug bill does not include the big amount paid druggists for filling doctors' prescriptions. I have not the figures for this expenditure, but that it is a large sum is certain. Professional judgment controls this latter use of medicines, and while it may be a question whether all prescribing of drugs has scientific warrant there is, nevertheless, reasonable restraint and trained guidance behind it. We might leave the cost of drugs prescribed by doctors alone for the present and think for a short space on the miscellaneous or un-prescribed use and cost.

Enough money is spent by Nova Scotians for patent medicines to finance practically all the activities of the provincial health services. Two and a half millions would supply institutional and medical treatment for every tuberculosis patient in our province, and to spare. Devoted and intelligently applied to measures for prevention of disease, improved sanitation and better food and housing for the poor, it would bring down to a minimum the incidence of infectious diseases and would raise the general physical standards of our people. Ask any outstanding public health official the things that could be done in this small province with two million dollars added yearly to our present resources!

Is this drug service worth the price? The answer would mean more thought and space and detail than the present occasion permits. Perhaps one has done enough in drawing public attention to an indulgence in indiscriminate medicines, a practice which may designate us as a drug-soaked people. An interesting article would be dealing with the effects of over indulgence in miscellaneous medicines on the social and economic life of Nova Scotia.

Sir William Osler, to whom the medical profession owes most for sane restraint in the use of medicines, would condemn the practice of unauthorized drugging. The best thought of the profession is certainly opposed to the principle of the business. The whole profession is opposed to its present excess. What can be done to stem the torrent of medicines on the market?

G. H. M.

PHYSICIAN WANTED

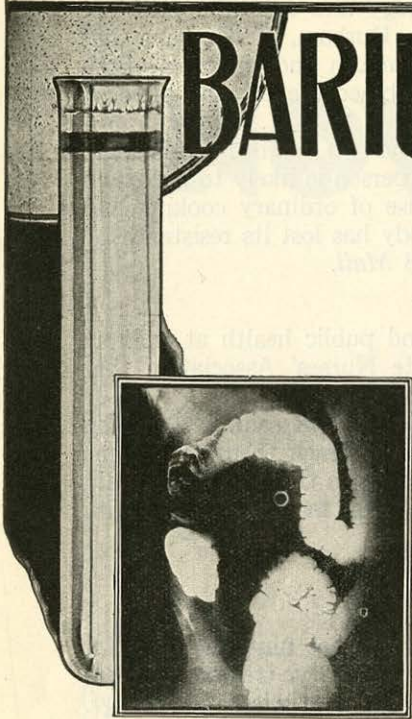
A Mining Company in Cape Breton wants to secure the services of a physician. Salary \$200.00 a month and expenses. Further particulars may be had through the Secretary, Dr. H. G. Grant.

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Dr. David T. Smith, professor of bacteriology and associate professor of medicine at Duke University Medical School, Durham, N. C., says that Vincents Infection, commonly known as trench mouth and pyorrhea—both serious dental infections—can be cured by a combined dietary and physical treatment.

According to Dr. Smith, the main causes of the two mouth infections are vitamin deficiencies and localized conditions. A person is likely to become a victim of either disease, he said, through the use of ordinary cooking and eating utensils as well as by kissing, once the body has lost its resistance by faulty diet and inadequate dental care.—Oct. 28 *Mail*.

Dr. T. B. Rice, professor of bacteriology and public health at Indiana University, told members of the Louisiana State Nurses' Association that the teaching of "safety first" to children was wrong.

"There is nothing so dangerous as absolute safety," he said. "Teaching children that their personal safety comes first is to teach them to become mollycoddles. Don't teach them recklessness, but teach them to be unafraid to face danger. A fine army these safety-first boys would make!"—Nov. 4 *Mail*

Statistics.

"What are the chances of my recovering, doctor?"

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