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The Modern Conception of Benign Uterine Bleeding

By H. B. Atlee.

THE title Benign Uterine Bleeding is now given to all bleeding occuring in women that is due neither to tumor, nor to some pregnancy anomaly. It includes such conditions as were known under the older classification as Chronic Endometritis, Functional Uterine Bleeding, Chronic Metritis, Fibrosis Uteri and Chronic Subinvolution. The changed nomenclature has come about with the changed conception of the cause of the condition. In the past the stress was laid, in the matter of causation, upon the local findings in the uterus itself, and particularly, of course, in the endometrium. But it is now known that these uterine changes are not initiated locally, but are the result of endocrine imbalances. We look to-day for the cause of such bleeding in derangements particularly of the internal secretions of the ovary and the pituitary.

Before these can be thoroughly understood it is necessary to have some picture of the mechanisms by which menstruation is induced, since they are all derangements of that function. The full endocrine mechanism that controls menstruation is not yet completely known. While it is agreed that the pituitary and the ovary play the major part, not only in initiating menstruation but in governing those complex changes that occur in the female physiology during pregnancy, there is all manner of evidence that other glands, particularly the thyroid, also play a role. Since this role, however, is a secondary one, this paper will deal only with the pituitary-ovary participation.

The first line of stimulus to menstruation comes from the anterior pituitary by means of a hormone called variously, Prolan A. Rho I, etc. This hormone causes the primordial follicle of the ovary to change into a Graafian follicle. The Graafian follicle, in turn, produces a hormone, estrin, which acts directly on the endometrium, causing various proliferative changes in its structure. The endometrium becomes thicker, the glands larger and longer. With ovulation and the formation of the Corpus Luteum new hormones come into play which differ in their effect from the previous. Here again, it is supposed that a pituitary hormone is a luteal-stimulating factor, and this hormone is known as Prolan B or Rho II. Under its influence the corpus luteum produces yet a further hormone, lutein or corporin. This, acting on the endometrium, induces changes of which the increase of secretion within the glands a lengthening and tortuosity of the glands, and a differentiation of the stroma in the direction of decidual formation, are the most noteworthy.

There is some difference of opinion as to just how menstruation is initiated, but opinion is now shifting to the stand that the bleeding is due to a withdrawal of lutein owing to deterioration of the corpus luteum, and the corpus luteum deteriorates because pregnancy has not ensued.

It will be seen from this that there are all manners of ways in which the complex hormonic control of menstruation may be interfered with, resulting

in derangements of the function as shown in excessive, insufficient or even no bleeding. If, for instance, there is insufficient stimulation from the anterior pituitary the Graafian follicle may not go on to corpus luteum formation. If there is too great a stimulation there may be too many corpora lutea formed. As a result of this excessive bleedings will occur. In fact, it is just these two events which are responsible for the excessive bleeding in the two sub-groups of Benign Uterine Bleeding about which the most is known. In metropathia hemorrhagica the dysfunction is excessive stimulation of the proliferative phase of endometrial growth due to the persistence of a Graafian follicle that never becomes a corpus luteum; while epimenorrhea is due to excessive stimulation of the secondary phase as a result of too many corpora lutea forming.

Concerning the other sub-groups (which will be later enumerated) the causation is not so clear, but it is accepted that these are due to some disruption of the complex hormonic mechanism governing menstruation. In parenthesis let me repeat again that Benign Uterine Bleeding is but one set of manifestations of disruption of this complex hormonic mechanism which controls all the physiological changes leading up to and including pregnancy. Scanty menstruation, amenorrhea, certain types of miscarriage and premature labor, hydatidiform mole and chorionic carcinoma all fall into this causative fold.

Benign Uterine Bleeding has been divided into the following groups and, as will be seen, these groups are based on the character of the bleeding manifested.

Metrophathia Hemorrhagica. This group accounts for about 26% of all cases of Benign Uterine Bleeding. Most of the patients are in the 40-50 age decade, although the condition may occur later in life and even under 20 years. It affects nulliparae as well as multiparae. In 50% of the cases there is a period of amenorrhea varying from five weeks to twelve weeks—but it may last much longer. The next period may start normally but continues as a more or less severe bleeding for from three to eight weeks. The flow is frequently severe but may be small in amount. In cases which come on at or near puberty it may persist as a steady dribble for months. In the other 50% of cases there is no amenorrhea and the period comes on at the usual time. In some cases there is a simple menorrhagia for some months before the continuous bleeding starts. The pathological findings in these cases are practically constant. The endometrium is greatly thickened: it may actually be polypoidal, and the glands are greatly dilated forming on section the classical "Swiss-cheese" appearance. In one ovary there is found a small follicular cyst—that is, a persisting Graafian follicle; the rest of the ovary and the other ovary are shrunken, and recent corpora lutea are found in neither. Associated with the endometrical change in the uterus there is often considerable hyperplasia of the muscle so that the uterus is considerably enlarged.

Epimenorrheal Group. This accounts for 36% of the cases and, as in the previous group, largely affects women in the 40-50 decade. Here, the regular 28 day period becomes shortened to a 21 or 14 day cycle. The period is increased both in duration and amount. The pathological findings are as follows: The endometrium is thicker than normal as a rule but may not be so. It is, however, intensely hyperemic and the glands are in the secretive phase of development. The ovaries show pea-sized hemorrhagic follicles on their

surface and there are often two corpora lutea of the same age, but normal in appearance, present.

Hypomenorrheal Group. This accounts for 8% of the cases and again chiefly affects the 40-50 year old woman. Here the normal 28-day cycle is increased in length to 35-42 days, with increase in the length of the period and in the daily loss. While the cycle may be regular at 35 or 42 days, it is sometimes irregular, coming on at three weeks one time and not for six weeks another, but always the loss is excessive and debilitating. Pathologically, the uterine findings correspond closely to the Epimenorrheal Group, but in the ovary there is no excess of recent corpora lutea. What happens in these cases is probably an excess of follicular stimulation which increases the length of the interval, with the formation of a hyperemic endometrium which, when it does break down, causes excessive bleeding.

Metrorrhagic Group. This accounts for about 5% of the cases. The average age was 40 years. The patients have normal periods with regular rhythm but between the periods there is a bloody discharge which varies from a mere pinkish staining to actual blood. The discharge is often associated with backache and usually stops before the next period begins. Pathologically there is considerable hyperemia of the endometrium and an oozing from it. The ovaries are enlarged, hyperplastic and hyperemic, with cystic follicles and a cystic corpus luteum. It is suggested that these hemorrhages correspond to the oestrus hemorrhages in some of the lower animals—which is borne out by the fact that these patients seem hyper-sexed.

Menorrhagia Simplex. 17% of the cases. In about 50% of these cases there is a simple menorrhagia, that is an increased loss without alteration in the cycle. It affects all ages equally from 20 to 55. The only pathological change is hyperemia of the endometrium. It is suggested that the condition is due to a too rapid disintegration of the corpus luteum. In the other 50% of cases there is continuous vaginal hemorrhages with no demonstrable pathology in uterus or ovaries.

Unfortunately, while the underlying causation of Benign Uterine Bleeding has been elucidated with an increasing clearness, there has not been a corresponding improvement in the technique of cure. This, despite the fact that tremendous advances have also been made in obtaining for therapeutic use various of the hormones, or their close relatives, that control menstruation. Estrin and various substances from pregnancy urine similar in constitution and effect to Prolan are marketed now under such names for the former as Theelin, Theelol, Amniotin, etc., and the latter as Antuitrin, A. P. L.—like hormone Emmenin, etc. The hormone produced by the corpus luteum, however, has not been produced in marketable quantity, and it is not yet known whether the pregnancy urine hormones similar in action to Prolan actually are Prolan, or represent a partial chemical breakdown in its constitution.

Nevertheless, the use of these already-marketted preparations has yielded some advance in the treatment of the condition, and in reputable clinics successes have been achieved in from 40-50% of the cases treated. But the figures, even from these clinics, are still inconclusive. My own experience, using these preparations in the dosage and manner advocated by such clinics, have not been particularly encouraging, and certainly I have had success in not more than 20% of my cases. The results do not indicate that these hormonic preparations should be used wide-spread as panaceas and it is my

opinion not only that much more work of an investigatory nature must be done on them, but the actual preparations themselves increased in strength and efficiency before they should come into general use. In the meantime, then, while certain successes have been obtained, some advance in therapy obtained, final success lies, like prosperity, around a corner—a corner where a more potent and more exact hormone awaits manufacture.

How then does one treat these cases?

In the first place one should attack the conditions by attempting to increase the bodily well-being. Focal infections, constipation and poor hygenic habits need to be corrected. Rest in bed during the bleeding spells for two or three periods may change the bleeding habit. Liquid extract of ergot in dram doses three times a day over a period of two or three months, together with interrupted Calcium lactate ten grains three times a day for four days—interrupt a week and resume, should be tried.

If these measures fail one of the pregnancy urine, pituitary-like hormones can be tried. There is a divergence of opinion as to dosage, some clinics using 100 rat units daily for ten days before and during the period, or where the bleeding is continuous starting it at once, others using twice the dose over the same time. Personally, I use the larger dosage. One of the draw-backs of this form of therapy is its cost, which bears heavily on some patients. The treatment may have to be repeated three or four times. Recent investigation shows that this form of therapy is not without its possible dangers, as it has been found that considerable changes take place in the ovaries of some of the treated patients which are not entirely of a salutary nature. These hormones therefore should not be pushed too hard. In one of my cases that at first responded fairly well to the 100 rat-unit dosage, it became necessary to greatly increase the dose to obtain effect, and finally a much larger dosage would not control it.

If this foregoing therapy has failed completely further procedure must be either surgical or radiological, and exactly what should be done depends on the age of the patient. In a woman in the 40-50 year decade—and most of the cases fortunately fall into this age-period—the continuation of fertility is no longer an important consideration. In such it is better now to consider either radiation or hysterectomy. In deciding between these two methods I choose radiation where the cervix is normal and there is no evidence of any extra-uterine pelvic pathology. Radium is inserted into the uterus after curettage and about 2000 m.c.h. are given. I have tried less than this and been sorry because of a return of the bleeding necessitating further radium. My aim is to stop menstruation altogether. I believe that radium is better treatment than X-ray, because the latter has a greater effect on the ovary, tending more than the radium to bring on the vaso-motor and other symptoms of the menopause. Where the cervix shows old lacerations with erosion, or erosion in the absence of lacerations, or where there seems to be extra-uterine pelvic pathology I do a hysterectomy, and I prefer the vaginal hysterectomy since it is followed by less shock and the uterus is easily removable by this route in this condition.

But when the condition presents itself in younger women, women whose fertility at all costs should be preserved, one is faced by a less satisfactory procedure. Here I try first of all repeated curettages. There are those who say that curettage has no place in the treatment of bleeding conditions and should only be used for diagnostic purposes. This, of course, is sheer non-

sense. One does not expect that curettage will permanently cure the condition, though sometimes it does, but it may be followed in favorable cases by more or less lengthy periods of freedom from excessive bleeding, during which menstruation is to all intents and purposes normal. It is this that one hopes for. One hopes that either with one, or with repeated curettages, one will be able to carry the woman along until she has had her family: for it has been quite definitely established that patients suffering from Benign Uterine Bleeding are not more infertile than the normal woman. In taking this stand I have the backing of no less an authority than Emil Novak, who, in personal communication, informed me that this was his own procedure in the younger women with a functional bleeding.

But supposing curettage fails? Supposing, after repeated curettages, the condition returns and will not ameliorate? In that case one must fall back again on either radiation or hysterectomy.

All this may sound like the counsel of therapeutic despair. I am not despairful that these benign uterine bleedings will not eventually be controlled or cured by hormonic treatment. I feel that we are on the right track following these hormones to their secret lairs, to the end that they will yield their final truth—and the cure of disarranged female physiology. But I do hold that at the present time we have not yet gotten a hormone therapy which is satisfactory, or which should be used generally and indiscriminately by practitioners who know nothing more about it than they can read in the advertisements of the pharmacological houses who produce it.

In England a bill is being considered by the parliamentary committee of food and health which would prohibit the sale or advertisement of medicines or appliances for the cure of certain conditions, the use of fictitious testimonials and the offer of diagnosis or treatment by correspondence (from J.A. M.A. January 5, 1935).

His One Chance.

At a New Year's Eve dance the doctor addressed a pretty girl: "Ah, I've caught you under the mistletoe."

"No, doctor," replied the girl, as she released herself from his embrace, "there's only one thing you'll ever have a chance of kissing me under."

"And what's that?"

"An anaesthetic."

Injuries About the Ankle Joint*

A Modern Method of Classification and Treatment.

ARTHUR L. MURPHY, M.D., C.M.

ONE foggy, London day toward the middle of the eighteenth century Sir Percival Potts tripped over a paving stone and broke his ankle. Thus was born in misfortune the Potts' fracture, a misfortune which has been handed down, with Sir Percy's classical description of his injury, even to the present generation of the medical profession. As the true patriot dies, unreasoning, for a bit of bunting on a stick, so the medical profession have accepted, through the centuries, a great name in explanation of a pathological state. Nomenclature of the proper name variety is gradually being replaced by the scientific and the time fast coming when a man must do more than describe a virgin microscopic vision or put a new twist in a haemostat to perpetuate his name. But Sir Percy's name still lives, to be applied at times, loosely, to all ankle fractures. The result has been delay in universal acceptance of a sound classification, based, as it must be, on the application of external forces to the bony and ligamentary structures of the ankle joint. Without this classification there can be no true comprehension of what has taken place and no accurate diagnosis. It must follow, then, as a truism, there can be no scientific treatment.

The classification I am presenting is not basically new. It was first introduced by Ashhurst and Bromer in 1922. I believe that full advantage is yet to be taken of its value, not only in diagnosis but in treatment. It is the whole, the alpha and omega of injuries about the ankle.

Classification:—

0.	Internal Rotation.	
1.	External Rotation	61.3%
2.	Abduction	21.0%
3.	Adduction	13.3%
4.	Compression in long axis of leg	2.7%
5.	Direct violence	1.7%
		100.0%

The classification is based on the movements of the foot-*vis.* The foot becomes jammed in a flanged railway track; off balance the body falls and, falling in, the foot is externally rotated. The result is an external rotation fracture of the ankle. This movement is responsible for sixty per cent. of fractures at the ankle and is probably the least considered in their treatment. Abduction, or tibial flexion, is next in frequency as a causative mechanism and so down to the relatively uncommon fracture by direct violence.

In this array I have taken the libery of inserting *internal rotation.* It stands at the top because it causes more injuries than all the others combined. I have numbered it zero because it practically never produces a fracture. A clear history of an internal rotation injury is almost diagnostic of a sprain.

The ligaments of the ankle joint are the cables through which the destructive forces work. Mesially is the broad, thin, internal lateral ligament splitting into three bands, to the scaphoid, astragulus and os calcis (Fig. 1).

* Written from lecture given at Dalhousie Refresher Course, August 27, 1935.

Fig. 1

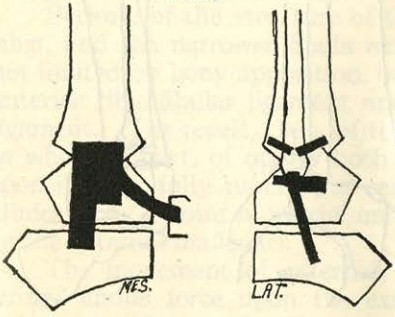


Fig. 2

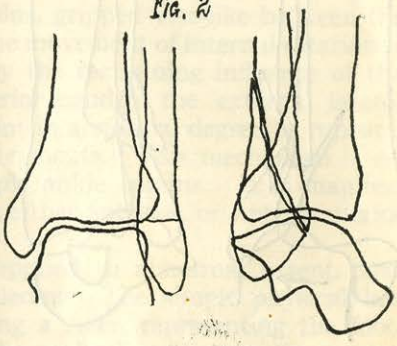


Fig. 3

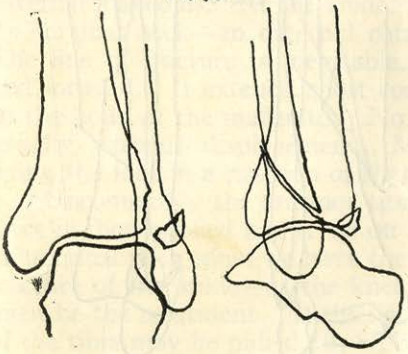


Fig. 4

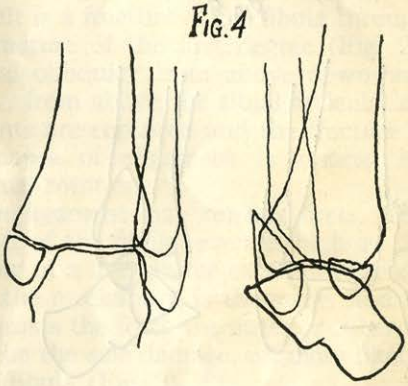


Fig. 5

Fig. 6

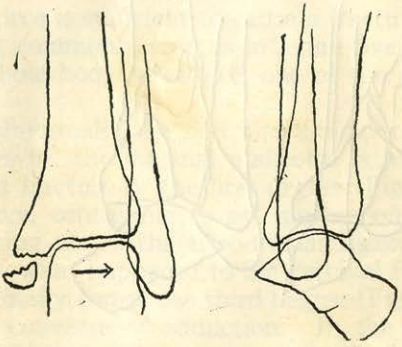


Fig. 7

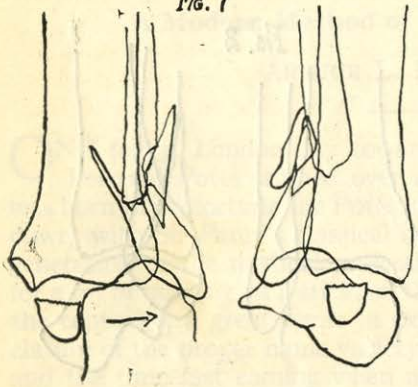


Fig. 8

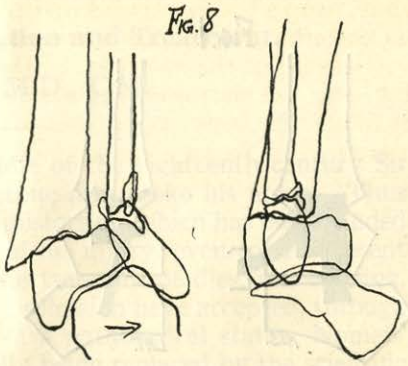


Fig. 9

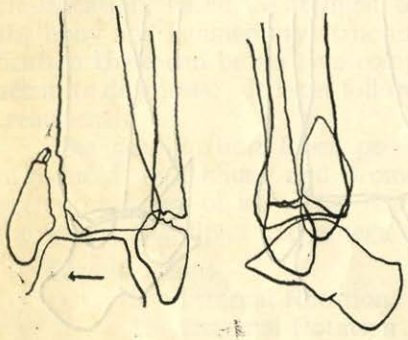


Fig. 10

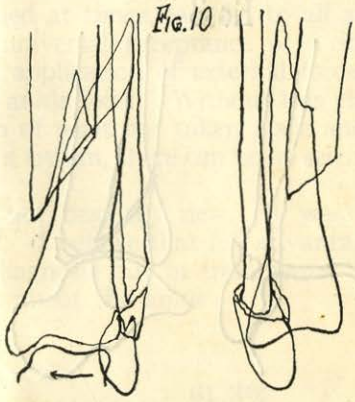


Fig. 11

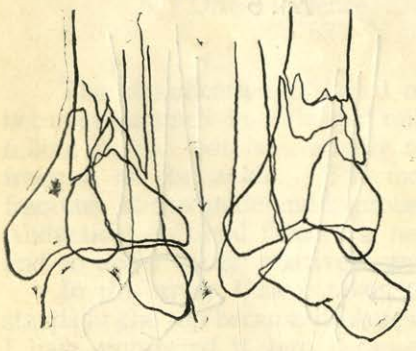
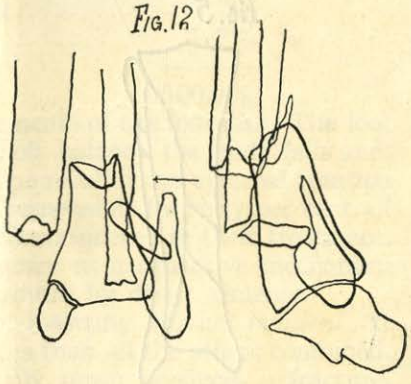


Fig. 12



The external lateral ligament is narrower but stronger. It, also, has three bands, two to the astragulus and one to the os calcis. Above are the anterior and posterior tibio-fibular ligaments.

Because of the structure of the astragulus, gripped vise-like between the tibia, and the narrower fibula externally, the movement of internal rotation is not limited by bony apposition, but solely by the restraining influence of the anterior tibio-fibular ligament and the anterior band of the external lateral ligament. The result, then, of this movement in abnormal degree, is rupture, in whole or part, of one or both of these ligaments. This mechanism is responsible for fully ninety per cent. of simple ankle sprains. It is manifest clinically by a point of maximum tenderness either anterior, or antero-inferior to the external malleolus.

The movement of external rotation, applied to abnormal extent, first brings undue force upon the external malleolus. The simple physical law governing this may be illustrated by placing a ruler, representing the foot, between two parallel books, representing the malleoli. "Externally rotate" the ruler to the right and the volume on the right alone is moved, i. e., the external malleolus. At the ankle, the result is a fracture of the fibula through its surgical neck—an external rotation fracture of the first degree (Fig. 2). The line of fracture is inevitable, a spiral obliquity from above downward and forward. It extends, most commonly, from above the tibial articulation to the body of the malleolus. No ligaments are ruptured and the fracture is usually without displacement. Maintainance of alignment is assured by fixing the foot in a position of slight internal rotation.

Uncommonly the anterior tibio-fibular ligament may rupture first. The force is then applied higher up on the shaft of the fibula, even as high as the anatomical neck when we have the anomoly of a first degree external rotation fracture of the ankle—at the knee! But the mechanism is the same, and so must be the treatment. If the ligament resists the force the anterior tubercle of the tibia may be pulled off. This may be the sole damage, or, more likely, the force, continuing to act, fractures the fibula (Fig. 3).

The force continues—the internal lateral ligament ruptures, or, more likely, the ligament holds but pulls off the internal malleolus giving the second degree of this fracture (Fig. 4). A posterior marginal fragment is frequently wrenched off as well.

The third degree occurs when the force is sufficient to cause a fracture of the entire shaft of the tibia and is most commonly seen as in figure five, one of the most difficult fractures in the whole body to reduce, one of the most difficult to hold after reduction.

When the force of abduction acts abnormally the first strain is upon the internal lateral ligament. This ruptures or, the internal malleolus is pulled off, transversely. This is the abduction fracture of the first degree (Fig. 6). The second degree occurs when the force, continuing to act, pushes off the external malleolus. With the force acting above the tibio-fibular ligaments the picture is as in figure seven. This is what happened to Sir Percival Potts because of the London paving stone. Finally comes the third degree (Fig. 8).

Abduction produces a picture the converse of adduction. In the first degree the external malleolus is pulled off, or the ligament ruptures (a simple sprain but decidedly not a minor injury). The second and third degrees follow naturally (Figs. 9 and 10).

Compression in the long axis of the leg will more commonly fracture the os calcis, the astragulus or even the hip. But it may force off the posterior margin of the tibia or more typically produce a shattering fracture (Fig. 11).

The fracture by direct violence is characteristic to the acting force (Fig. 12).

Having considered the important role which the ligaments play in the production of ankle fractures, realizing that they resist rupture more consistently than does bone, we must conclude that a ruptured ligament, that is, a sprain, is an injury of severity at least comparable to the first degree fractures. I do not refer to the minor sprains in which the ligaments have been merely stretched with perhaps a few fibres ruptured, but to those cases in which history and examination point to a complete dissolution of the continuity of the ligament (sometimes the finger tip may feel the bony astragulus where ligamentary tissue should be). It is true that the ligament will reunite without the immobilization considered necessary for a fracture but it will unite by a broad band of fibrous tissue. This means a lax ligament and a weakened joint which may jeopardize a promising athletic career or, when its owner is fat and forty, cause his ankle to turn under him as he rushes for a tram or climbs out of a sand trap. I believe these cases should be treated by immobilization in a walking plaster cast for from three to six weeks.

The reduction of the external rotation injury is often handled in this fashion—the foot is pushed and twisted into the positions of (1) dorsiflexion, (2) abduction and (3) internal rotation, (this latter by way of a final flourish). All three movements are necessary. Dorsiflexion serves to prevent foot drop in convalescence, to permit the application of a servicable walking cast and to balance tension in the long muscles of the leg. Muscular rest may be attained by dorsiflexing to a right angle. Dorsiflexion beyond this point is harmful. Particularly is this true in the female who has been wearing high heeled shoes since adolescence, and, as such, constitutes the great majority of her sex. She has developed a permanent shortening of her tendo achilles and a permanent limitation of dorsiflexion at the ankle joint, often to greater than the right angle. Forcible efforts at dorsiflexion in a third degree fracture are almost sure to produce posterior displacement of the fragments. Dorsiflexion is of importance, but not as the prime factor.

Adduction is necessary for two reasons. First, it aids in preserving the arch of the foot. Second, that all important movement of internal rotation can only be realized in its fullest extent when combined with adduction. By the preliminary traction alone third degree fractures can often be reduced to good functional alignment. But unless the distal fragments have been firmly internally rotated and held that way, unless the tiny serrated edges of bone are pressed against one another in an apposition which cannot yield, the fracture is sure to slip. No matter how beautiful the X-ray film of reduction, no matter how firm and snug the plaster, the patient is very likely to wear a cane for the rest of his days.

Hence a re-arrangement of the mechanism of reduction is necessary, thus—(1) internal rotation, (2) adduction, (3) dorsiflexion. The abuction and adduction fractures are dealt with similarly, the reducing forces being the converse of those which produced the fracture.

For preliminary splinting in those cases where displacement is of a minor degree I use the pillow splint. It is true, the wooden back splint is more professional in appearance and more difficult to obtain but it possesses these disadvantages: no matter how generously padded it is uncomfortable; it

causes pressure on the calf muscles tending to throw them into spasm with a resulting increased deformity; the application of a tight bandage to hold it in place causes further uneven pressure and both hastens and exaggerates the formation of oedema. The pillow splint, applied as tightly as possible with strong safety pins, commencing at the knee, is comfortable; it exerts an equal pressure on all parts of the leg making for muscular relaxation and preventing oedema; it holds the foot in the mechanically correct position. This latter object is attained thus—Allow six inches of the pillow to extend beyond the sole of the foot. When it is firmly fastened about the leg (for an abduction fracture) sweep the end of the pillow on the lateral side of the leg in toward the internal malleolus, fixing it there to the mesial side. This places the foot in a position of adduction and dorsiflexion. Similarly, internal rotation or abduction may be had as desired.

For the third degree fracture or that produced by direct violence or compression in the long axis of the leg, traction is necessary in the reduction and a padded plaster cast to prevent slipping. Excellent traction may be obtained with a stout length of cotton bandage. It is split down the centre for about three inches and the foot slipped through this opening so that when traction is applied through the bandage it rests upon the dorsum of the foot and over the insertion of the tendo achilles into the os calcis. The ends of the bandage are now tied about the waist of the assistant, standing at the foot of the table. He is thus able to use the whole weight of his body in traction while having both hands free for manipulation of the foot. Sheet wadding and plaster are applied and the bandage ends cut off only after the plaster has set. The plaster is at once split laterally, but bivalved only if the condition of the toes demands it. A plaster which has not been applied too thickly will accommodate itself to the swelling when split only on one side. As the swelling subsides it must be restrapped daily, that there may be no air space within the cast.

After the swelling is gone—or in those rare cases which reach the operating room before it has begun to form—the walking cast is applied. This differs fundamentally from the padded cast. It is applied directly to the part over a thin, tight fitting stocking. It is reinforced about the heel for weight bearing and molded well against the condyles at the knee. Where the fracture extends into the shaft of the tibia it is carried up to immobilize the knee. A heel of saddler's felt, about three quarters of an inch thick, is strapped firmly to the cast with adhesive plaster.

The theory of the walking cast, completely borne out in its clinical application, is that the weight of the body in walking is transmitted from the heel of the cast directly to the knee. There is no unequal pressure at the fracture area and no movement. Bony immobilization is absolute. Not so the muscular. With each movement of the leg the muscles go through their normal routine, in a greatly lessened degree. No daily half hour of painful massage can compare in thoroughness with the work these muscles do. Static tenosynovitis cannot develop and the intimate play of the tendons over synovial membranes and carpal bones maintains a tone which cannot be approached by any artificial means. The business or professional man, the housewife is back to work within two weeks of the accident and, when the cast is removed about the third month, if he has been properly active, his ankle movements will be within fifteen or twenty degrees of the normal.

The walking cast was developed independently in three clinics, nationally and geographically strangers to one another. Delbet in Paris devised the walking plaster caliper which gives support to the tibia and fibula, late in convalescence. Lorenz Bohler of Vienna employs a walking cast which he applies to the bare skin in molds united by circular plaster with an iron stirrup for weight bearing. Fraser B. Gurd of the Montreal General Hospital originated the type I have briefly described and which I believe to be the most ingenious and of the greatest clinical value. To Dr. Gurd and his associates I am indebted for what knowledge I possess on the subject.

Bones will break—rarely by external rotation but not uncommonly by direct violence—in such a way that the ordinary methods of treatment do not suffice. Reduction may be obtained in these cases by skeletal traction. With the patient under Avertin anaesthetic a Kirshner wire is inserted through tibia and fibula just below the knee and a second distal to the fracture, either through tibia and fibula or, if necessary, through the os calcis. The leg is in a Thomas splint, suspended from a Balkan frame. The proximal wire and its stirrup are fixed to the splint. On the distal stirrup, over a Buck's extension, is put a traction of forty to fifty pounds. Six to twelve hours of this traction will suffice to reduce the most stubborn displacement. When the desired alignment is attained Plaster molds are applied as in the Bohler technique, incorporating the Kirshner wires. The plaster sets and stirrups and Thomas splint are removed.

Many excellent apparatuses are now on the market for this type of work, so designed that the position of the fragments may be controlled to the least degree.

It may be argued that this is a very complicated technique and that a much simpler way is to make a little incision and put on a bone plate, and that in case after case this method has been entirely satisfactory. But in the hundreds and the thousands of cases, osteomyelitis and the lesser sequelae of arthritis and neuritis are bound to creep out. And for the operator of limited experience it is not altogether simple. I have seen surgeons of whose abdominal work I stood in awe, drive screws into the delicately designed bone structure a prudent carpenter might well demur at using on the hinge of a door. I believe there should be a maxim in surgery—probably there already is one—that the simplest way is the best until proven otherwise. In fracture therapy the closed reduction must always be the simplest way. I believe the fracture surgeon should be represented, not as a wielder of the scalpel, but as a member of that simpler creed, a healer with his hands.

To Paul A. Bishop, M. D. Philadelpha (*Fractures and Epiphyseal Separation Fractures of the Ankle*, The American Journal of Roentgenology, July 1932) I am indebted for much of the detail in regard to the mechanism of ankle fractures as well as for many illustrations, more of which I would like to have published had space permitted.

More detailed descriptions of walking cast technique may be found in Dr. Fraser Gurd's article in the Canadian Medical Journal, July, 1935.

Infant Feeding*

DR. N. BARRIE COWARD.

THE study of Infant Feeding may be made a highly scientific one to-day. As a result, I could, perhaps, give you a purely scientific paper on this subject, but I have felt that the most good probably would result if I kept away from this aspect, and stressed mainly the clinical and practical side of Infant Feeding. Nevertheless the correct feeding of infants is largely a matter of applied physiology, so that a proper understanding of the infant food requirements, and an appreciation of the physiology of the digestive and metabolic processes of this age is really necessary.

Just to refresh your memories I will briefly mention then a few of the more important requirements:—

(1) The average healthy normal infant requires about 45 calories per pound of body weight per day in order to gain properly. This covers the needs for Basal Metabalism, growth, muscular activity, the process of digesting the food itself and the amount lost in the excreta. This figure offers us a safe start, but it is not necessary that it should be absolutely maintained. Many babies will gain quite normally on 40 calories per pound, whereas others require 48-50 calories per pound. This is determined by the baby's progress, the weight being the most satisfactory criteria to measure it by. A normally growing infant gains roughly an average of 6-8 ounces a week for the first six months, and 4-6 ounces a week for the second six months. A baby who remains persistently either above or below these levels should be considered as being overfed or underfed respectively as the case may be.

As practically all infant feedings are calculated now on a caloric basis, the knowledge of the caloric values of the various preparations used is required. To the man in General Practice, the memorizing of the different caloric values would be bothersome and incidently needless. However there are a few which he can and should remember, as he is likely to be using them in practically all of his cases of normal infant feeding. The main ones I would draw your attention to then are: Breast Milk 20 cal. per oz.; Cow's Milk 20 cal. per oz.; Evaporated Milk 42 cal. per oz.; Cane Sugar and Corn Syrup 120 cal. per oz. and two level tablespoonfuls compose the ounce; Barley Flour 100 cal. per oz., and three level tablespoonfuls equals the ounce.

(2) In considering the various food elements themselves, the most important one to consider is the Protein intake. Proteins are required for the manufacture of new tissue, as well as for the repair of old. As the infant is in a very rapid growing stage during its first two years, the need of an ample protein supply is evident. So frequently milk mixtures as used are too dilute to supply this protein need. Sometimes too large quantities of dilute mixtures are given with the result that regurgitation and gastric distress follow, which result in a loss of available protein. Again, too frequent feedings are resorted

* Presented at Dalhousie Refresher Course, Halifax, N. S., Aug. 1935.

to which produces in many cases a dyspepsia, with attending vomiting, and so loss of valuable protein.

The amount of Cow's Milk required to provide this Protein need is much larger than that for Breast Milk, due to the difference in the protein composition —a point of practical importance when writing Cow's Milk mixtures. For the average healthy baby, the protein requirements can be safely met by giving one and one-half ounces of Cow's Milk per pound of body weight per day. That is the protein content in one and one-half ounces of Cow's Milk covers the protein needs per pound of body weight.

As regards Fat little needs to be said here. Carbohydrates, however, form an important consideration in that they are often used to excess. Carbohydrates are important,

(1) in that they are the most economical of all foods, and hence are used mainly as energy producing foods;

(2) they have marked protein sparing properties, i. e., providing there is sufficient carbohydrate present, the body will use it to produce energy, the protein being then left free to be used in growth and the formation of tissue;

(3) they also play an important role in maintaining a steady gain of weight, due to their property of effecting water retention. It is in this capacity that an excess of carbohydrate in the diet proves the undoing of the infant. Due to the carbohydrate excess there is a marked increase in water retention. This in turn causes a rapid and steady gain in weight, but it is an unhealthy gain and not a healthy one. This water is not bound firmly, and as soon as the infant developes an infection there is a rapid outpouring of this water, with consequent rapid loss of weight—a factor which may throw itself in the balance against the infant's life, especially if the infection be severe.

On examination these infants are large, soft and pale, and their tissues lack the firm turgor of a better healthier fed infant. In this respect it is wise to remember that a mere gain in weight is not of itself evidence of good nutrition. In addition to a steady gain of weight, there must be normal growth, good muscular tone and turgor and the presence of a healthy color.

Cow's Milk and Evaporated Milk dilutions as generally used do not provide a sufficient carbohydrate intake. It is therefore necessary to add additional carbohydrate, which is done in the form of Cane Sugar, Corn Syrup or some one of the other patent preparations. For the average infant, the addition of one ounce of sugar, or similar preparation, is usually sufficient. If we limit the added sugar to one ounce, and then make up the necessary calories by using milk, we are not likely to overstep the carbohydrate tolerance, and we are more likely to insure an adequate protein intake. As regards the choice of the carbohydrate to be added, the normal infant will digest cane sugar or corn syrup perfectly well, and as these are relatively cheap, and usually staple household articles, they should always be tried first. The use of the more expensive preparations have little to be said in their favor, except where there are definite indications for the use of them.

As regards the Vitamins, I am not going to say much, except just to remind you not to forget to use them. This is especially true of Vitamine C if you are using evaporated milk, or other patent preparations, where in most cases the process of preparation destroys this vitamine content. The time for beginning the two added vitamines used in normal feeding cases, namely Vitamines C and D, varies depending on the infant and feeding used. The

normal breast fed infant does not require cod liver oil until about three months, and orange juice until about four or five months of age. On Cow's Milk about four to six weeks earlier than this. On evaporated milk, and other patent foods, orange juice should be begun about three weeks after the infant is put on the feeding, and cod liver oil shortly after this. As regards the dosage, one teaspoonful of orange juice will supply enough of the antiscorbutic factor to prevent the development of Scurvey, although the amount given may be increased up to one tablespoonful. This is best given in an equal quantity of water. Practically all babies like orange juice, but for those who don't tomato juice may be used in slightly larger doses, or the juice of other fresh fruits and vegetables. As regards Vitamine D there are many preparations on the market. I feel that it is best to keep away from the daily use of Viosterol except in cases of Rickets, or where there are specific indications for its use. Plain cod liver oil in dosage of one teaspoonful three times a day is the best preparation. There is one preparation on the market which allows us to get away from the large dosage, which is the one argument against the use of plain cod liver oil, and yet does not employ the use of Viosterol, and that is Abbott's Vitamine Fortified Cod Liver Oil. With this preparation one-half to one teaspoonful daily will cover the vitamine needs for an infant. Cod liver oil seldom, if ever, needs to be given during the summer months, providing that the baby is put out in the sun daily.

The last requirement, I would also briefly mention, is the fluid requirement of the growing infant. This is met by the fluid taken in the feeding plus additional water given between feedings. The fluid requirement of an infant is about two to three ounces per pound of body weight per day. More often than not this is covered entirely by the formula. It is, however, not necessary that the formula provide this amount, providing that the difference is made up by water given in between feedings. However, as the baby grows older the formula should never form more than forty ounces of the total daily water intake.

Before going on to discuss the choice of infant feedings to be used, let us consider one or two general facts regarding the handling of the infant, its food and its feeding hours.

An artificially fed infant should be fed in a semi-upright position on the knee, and not be left lying in the cot with the bottle propped up on the pillow. This is a very common practice, and one to be condemned. It predisposes to excessive air swallowing, with its resultant unrest for both baby and parent. Feedings are frequently changed as disagreeing with the baby, when the real reason for the colic lies in this common practice.

Babies should also always be held up following feedings. So frequently the habit is to hold them up only for one or two minutes, yet in many cases this is far from being sufficient. Every baby will bring up one bubble of air, whilst many will bring up two or even three. In many cases it requires holding the baby up for five to ten minutes, or even longer, following the feeding.

A baby immediately after it is fed and held up should be placed in its cot on the right side. This position may be changed later on, if necessary, but this is the best position for right after the feeding.

The inculcation of correct feeding habits is most important, and should be commenced at the earliest age possible. The infant should always receive its food at regular intervals, the feeding hours depending on the age and size of the baby, and other factors relative to the case itself. If the baby is asleep

at his feeding hour he should be awakened. On the contrary if he awakes before his feeding is due, he should be made to wait. No food should be given just because a child is fretful and crying. If the baby persists in awakening and crying an hour or so before every feed, and we are satisfied that the feeding is a good one and agreeing with the baby, then the feeding should be increased either in strength, in volume or in both as the needs may be.

As regards feeding hours there are various combinations to choose from, such as every three hours with eight or seven or six feedings a day, and every four hours with six or five feedings a day. For the normal healthy infant I feel that the every four hours times five schedule is by far the best. This can be adopted right from birth on, and permits in my opinion for a healthier happier infant, as well as allowing the mother more freedom. It is quite true that for the first four to six weeks the average gain may be somewhat slower than those on a three hour feeding schedule, but they soon catch up and even pass those who are fed more frequently. I am not advocating this schedule for prematures or weaklings but for any normal seven pound baby or over. However, with this schedule it is important to make sure that the infant receives an ample intake of water, or preferably a 5% Lactose solution, during the first few days of life. It is certainly much easier to start an infant on an every four hour times five schedule, than to attempt to change it at three or four months or even later, and I would like to stress again that infants will do equally well on this schedule as on any other. However, if an every three hour feeding is used during the earlier months, it should definitely be changed to an every four hour times five one by the time the infant is five or six months old. As the baby grows older the feedings are gradually reduced. Most babies by the time they are eight months old do not require the night feeding, that is they are fed four times during the day between 6 a. m. and 6 p. m. By time they are ten months old three meals arranged during the day e. g. 8.30 a. m., 1 p. m., and 5.30 p. m. will suffice to meet the baby's needs.

Needless to say the choice feeding for an infant during its early months is Breast Milk, and wherever possible every thing should be done to encourage the mother to nurse her own baby. If the mother has not a sufficient quantity of breast milk, but can supply 50%, or even 40% of the feeding, the babe should still be kept at the breast and a complimentary feeding given.

Very frequently one runs up against breast fed infants who are restless, irritable and colocky. In these cases the mother usually diagnoses the fault as that her milk is not good, and does not agree with the baby. Actually this diagnosis is incorrect, the fault lying in such factors as too frequent feedings, improper position of the baby while nursing, interference with the baby's breathing—a very common but most important one—small or inverted nipples and so on. If a search is made for the cause, and then corrected, the distressing symptoms will clear, and the mother can nurse her baby in peace, providing always that her condition permits it.

As regards the artificially fed infant, no hard and fast rule can be laid down as to what feeding is best for a baby. The choice of the feeding depends on the merits of each individual case. The commonest used feeding is probably Cow's Milk, and for the average case I think it is the best one to begin with. The composition of cow's milk is very different from that of breast milk, and whereas it is safe to use breast milk undiluted it is not wise to use cow's milk as such in the same way. I might add here, however, that there are schools where nothing but whole milk mixtures are used quite successfully.

The percentage of milk and water used to make up the feeding varies at different ages. With the exception of perhaps the first week of life, the dilution should never be weaker than equal parts of milk and water. Increase in strength is best made by adding one ounce more milk and one ounce less water at a time, and on occasions as the indications call for it. Increase in volume is made by increasing both milk and water, but keeping the relative proportions the same as they were before. It is unwise to increase both the volume and relative strength at one time, an increase in volume being in itself also an increase in the milk taken. This applies really to all artificial feedings.

Evaporated Milk is another commonly used feeding, and also a good one. Evaporated milk is cow's milk concentrated to two and a quarter times its volume, so when ordering evaporated milk feedings the amount of milk required is just half what you would use if ordering cow's milk. This feeding is no doubt easier to digest than cow's milk as the process of evaporation breaks up the protein, producing a smaller softer curd, and also homogenizes the fat. Because of this it makes a good feeding for nutritional disturbances, for weaklings and prematures where breast milk is unobtainable, for digestive upsets following infections, and where there is difficulty in digesting cow's milk. It is probably one of the, if not the, safest feedings to use in cases of infantile eczema.

These two milks really form an adequate armamentarium for the feeding of practically all normal infants. If after a reasonable try they prove unsatisfactory, then recourse may be had to either modifying the mixtures, or using some one of the other prepared foods.

The commonest ways of modifying the milk mixtures are:

(1) By the addition of Lactic Acid, or by culturing the Lactic Acid producing organisms in the milk, in cases where there is some difficulty in digesting the milk, either as a whole or protein in particular, where you purposely wish to make the milk more digestible, or in cases where a small but concentrated feeding is indicated. The reason for this is that milk has a high buffer value, and when taken as such combines up with practically all of the Hydrochloric Acid in the stomach, leaving very little to carry on the digestion of the milk. Now if acid is previously added, it reduces this buffer action so that the hydrochloric acid is then left free for digestion. It is also because of this that a much more concentrated feeding of acidified milk can be safely given, than can be if using a plain milk mixture. Lactic Acid has been found to be the most satisfactory one to use, and it is completely oxidized by the body.

(2) By the use of Barley Flour, or some other starch, in place of sugar, where there is a tendency to fermentation with its undesirable symptoms, where you wish to delay the rate of digestion, as evidenced by the rapid emptying of the stomach, and the passage of improperly digested stools.

(3) By the addition of a Casein preparation, e. g. Casec. This is usually used in place of the added carbohydrate where you wish to increase the protein, and finds its main use in cases of diarrhea. The usual modification is to reduce the amount of milk, omit the sugar and add the Casec. It is also of value in cases of carbohydrate intolerance, where skimmed milk with added casec makes a good substitution feeding.

In addition to these there are many prepared milks on the market available for infant feeding. These prepared feedings are usually much more

expensive, and for the average case it is questionable whether this greater expense is justifiable. The main argument in favor of these prepared foods is that they are sterile, and there is much less likelihood of underfeeding with them as so frequently occurs when milk dilutions are used. Consequently they are a safer feeding to leave with parents when you are unable to see the baby frequently.

Now if one decides on any feeding for a baby, and finds that after the baby has been on the feeding it is not suitable for that particular baby, then, before changing, stop and reason out why the feeding does not agree. Is it because of too much protein, or too much fat, or too much carbohydrate? In this way you are not likely then to substitute a similar feeding for the other one. For example, if a baby has been on Nestle's Food and is obviously not doing well, it would be useless to then change the feeding to Condensed Milk or a Malt Soup mixture and such like feedings. Nestle's Food is a high carbohydrate feeding, and so is condensed milk. Therefore they both belong to the same class of feedings, namely high carbohydrate, and babies that will not digest one will certainly not digest the other, or others of the same class. So if we wish to succeed then, we must not only change the feeding, but change the class of feeding as well, so in this case we would use one low in carbohydrate and high in protein, e. g. Protein Milk. This same principle holds true for whatever type of feeding is used, and for whatever foodstuff is not being digested.

Now suppose a baby who has been on, say, a cow's milk formula and apparently doing well, becomes fretful, flatulent and colicky. If we can rule out such mechanical causes as we mentioned before, then we should consider this as signs that the baby is not digesting the feeding. Our suspicions become facts if the condition has progressed so that there is also associated anorexia, failure to gain, vomiting and abnormal stools. The usual cause of this is that the baby has now become intolerant to one of the three constituent food factors in the milk, namely either the protein, fat or carbohydrate, and this includes the added carbohydrate as well.

Intolerance to protein is comparatively uncommon. The condition may develop either as an acute or chronic one. The commonest symptoms are vomiting of large hard curds, the vomitus having little, if any, acid smell, and the passage of large hard curds in the stool. The stool may be normal in appearance except for the presence of curds, or be constipated. Sometime in acute cases they are loose, of brownish color, have a musty odor and are very irritating to the buttocks. Flatulence and colic are often marked and very troublesome. The treatment is, of course, the reduction of the amount of protein given. In acute cases the protein should be eliminated entirely, but never for more than 48 hours. The protein content after being reduced should be gradually worked up again, but never to as high a percentage as was previously given. In the treatment of this condition the acidified milks are of great value.

Intolerance to fats is by far the commonest and, incidentally, the hardest to correct. Here again the condition may develop as an acute or chronic one. Common symptoms are: vomiting, the vomitus having a strong acid odor, usually of butyric and other fatty acids; and abnormal stools. The commonest abnormality is the passage of many soft small curds, and these are often accompanied by mucus. Frequently the stools are grey or greyish yellow, large, hard and dry, sometimes so dry as to be crumbly. These are the typical

"soap stools". Sometimes they are watery, strongly acid and cause marked irritation of the buttocks. Flatulence and colic are also well marked. The treatment here is to cut down on the intake of fat. In severe cases the diet should be fat free, in the less severe the fat greatly reduced, and then slowly worked up as the babe's tolerance will allow, but again never to the same amount as was previously given. This process in many cases may take weeks or even months to do. In these conditions the use of Dryco, a prepared skim milk powdered feeding is of value. In mild cases the change from cow's milk to a weaker evaporated milk feeing will often suffice, as the process of evaporation has homogenized the fat rendering it much more digestible.

Intolerance to carbohydrates will occur regardless of what preparation is used. The disturbance may be either acute or chronic but is more often acute. The most prominent and characteristic symptom is the passage of loose, or watery, green acid stools. These are extremely irritating and produce marked excoriation of the buttocks and genitals. Vomiting is not as frequent a symptom as in Protein and Fat Intolerance, but when it does occur the vomitus is usually watery. Flatulence and colic are very common. Loss of weight as before mentioned is often a marked symptom especially in the acute cases. No doubt in a considerable proportion of cases part of the symtoms are caused by the fermentation of the sugar of a result of bacterial activity. It is often impossible to say which symptoms are produced by the disturbances of the digestion of sugar and which by the products of bacterial activity. However, the symptoms of intoxication in severe cases may be very marked. The treatment is to omit the offending cause. It is almost impossible to get a feeding which is devoid of sugar as milk itself contains 4% milk sugar. Infants suffering from a disturbance of sugar digestion usually also have a lowered tolerance for fat as well. It is advisable then that the feeding chosen should be one low in fat as well as sugar, and high in protein, e. g., Protein milk. Usually carbohydrate can be added in a few days and it is best to begin with one of the starches such as Barley Flour, or one of the Dextri-Maltose preparations as these are tolerated much better. They are then worked up carefully but as fast as possible because a diet of protein milk alone will not supply the necessary caloric needs for normal nutrition.

Signs of intolerance to any food stuff may develop irrespective of what feeding is used, the symptoms being much the same.

As regards the solid foods I am just going to say a few words. I usually begin infants on cereal mixture at six months, or sooner if they have reached a weight of 15 lbs., and the cereal of choice for infants, I think, is Pablum. This is a pre-cooked special cereal put up by Mead Johnson Co. This is given in teaspoonful amounts for four or five days until the baby becomes accustomed to the new feeding. If there are no upsets then the cereal may be increased gradually to one tablespoonful. At first cereal is given just once a day but after three weeks may, if required, be given twice daily, the amount given being increased as needed from then on. With the beginning of solid foods it must be remembered that they are additional foods and not substitution foods, and it is best to give them before the milk feeding is given. If the milk is given first frequently the baby will refuse the solid food, and then there is difficulty in getting the baby to take it. Vegetables are given in the same manner at about eight months. The choice of vegetables to use is quite a varied one, but there are a few which it is best to omit from the baby's diet, namely: turnips, parsnips, cabbage, onions and potatoes. I include potatoes

because it is a very starchy food and a difficult one to digest. It has a sweetish taste which infants are more likely to prefer to the other more suitable vegetables. I think it much wiser and better to have the infants thoroughly accustomed to the other vegetables before beginning potatoes. Consequently I rarely use potato in the diet before the child reaches eighteen months or two years. All vegetables should be seived until the baby is eighteen months old and then finely chopped till about two years. After this they can be given in a coarser state. The pulp of stewed fruits like prunes, apricots, apples, may be given during the ninth month, as may also the yolk of an egg. These are perhaps best given at the dinner feeding with the vegetables. Soups may be given for variety during the tenth month. The white of the egg may also be given now starting slowly and increasing as the baby will take it. Junket, custards and jellies may be also used in addition to the stewed fruits. Scraped beef may be given at 12 months.

This, I think, covers the feeding of normal infants during the first year or two years. I realize that the subject INFANT FEEDING entails a discussion of many other special milk feedings, the feeding of prematures and weaklings, Hypertonic infants and such conditions as dyspepsia, marasmus and so on. These, for obvious reasons have been purposely left out of this discussion. However, I hope that there has been something of interest because no one knows better than I the futility of covering such a wide topic in such a short time.

Beyond Him.

At a Rugger international between England and Scotland, an English supporter kept shouting, "Sit on 'em, sit on 'em!" At last one old Scot could stand him no longer. "Na, na, my guid man," he said, "you may sit on a rose, you can sit on a shamrock, but I'm hanged if you can sit on a thistle."

Yes, Why?

"Why remain single?" asks a married man. "Why knot?" asks a bachelor.

The teacher had labored long and patiently to teach little Arthur the points of the compass.

"When you stand with your face to the north, your right hand is toward the east, your left toward the west, and your back toward the south. Now, tell me the directions. What is in front of you?"

After a thoughtful pause, little Arthur replied: "My stomach."

Diagnosis in the Child

With Special Reference to the Abdomen.

DR. PHILIP WEATHERBE.

CONGENITAL Pyloric Stenosis, Intussusception and Appendicitis are three not uncommon surgical conditions met in children which demand early diagnosis for successful treatment. In two of them immediate diagnosis is imperative if the life is to be saved. Although immediate diagnosis in Congenital Pyloric Stenosis is often not possible, prolonged delay spells disaster. Operation is now very satisfactory in those cases which do not respond to medical treatment and are not allowed to go too far down hill.

The age incidence of disease, in children, is a valuable diagnostic aid. The age incidence of Intussusception is not the age incidence of appendicitis and vice versa, although it is possible to have either out of its age incidence.

Keen observation of the undisturbed child is of value and often gives a clue when the accurate history is wanting.

The way of approaching the child is important. Children are sensitive to direct attention and this can easily be avoided. The child's confidence is worth gaining. Never lie to a child. If it will hurt, tell him so. Past experience has taught him to associate the most severe pain with the most pain free promises. These minor points are of more importance than one first appreciates. Before examining the throat or rectum which, by the way, should be done at the end of the general examination, mention that it will be uncomfortable, but necessary in order to find out the trouble. It is surprising how little they object to the rectal examination, so valuable in all abdominal cases.

The general examination in all cases is so important before treatment, that one case out of many is worth citing:

Case 1. Child, boy, 6 yrs., who had tonsils and appendix removed, and in spite of that fact, was still suffering from his original complaints—a chronic cough and chronic pain in the abdomen. The parents were resigned to the fact that all skill had been tried and that it was a hopeless case of tuberculosis. The diagnosis soon revealed itself during a routine examination, to be one of round worms, the eggs of that worm showing under the microscope. Also, the X-ray plate showed a persisting Thymus Gland.

One other case, No. 2, had symptoms much the same as the rest of the family, stricken during an epidemic of summer diarrhoea. The routine examination revealed a very large appendix abscess, palpated per rectum. It was lanced through the rectum and likely prevented rupture into the peritoneal cavity. Again one is impressed with the importance of the routine examination even in apparently trivial cases.

The diagnosis of rarities or diseases which seldom occur at the age under consideration should be made only after the commoner conditions have been ruled out by thorough, general examination.

Acidosis or Cyclical vomiting as well as Pyelitis is seldom missed if one is on his guard. If in any doubt examine the urine but be careful not to allow a positive finding in the urine to lead you astray when there are other symptoms present. A severe toxaemia can easily mask symptoms, as can early gangrene in appendicitis. Of most value in abdominal disease is the rectal enema and

rectal digital examination, neglect of which will sooner or later lead to trouble.

Pneumococcal Peritonitis is probably the most fatal acute disease with which the surgeon has to deal and it is confined to childhood. The primary and acute type is only found in female children, 2 to 10 yrs. It is a rare disease and most commonly diagnosed as acute appendicitis. This is an excusable mistake, especially as the treatment is the same. An immediate abdominal exploration is done in both conditions, although Acute Primary Pneumococcal Peritonitis is usually hopeless.

Intussusception is a common cause of acute intestinal obstruction in children who are usually below the age for appendicitis. It depends upon early recognition for successful treatment. Although it may occur during an attack of ileo-colitis, it more commonly appears suddenly in apparently healthy boy babies of six months to two years of age. The symptoms are abdominal cramps, accompanied by severe shock. There is apparent well being between the cramp attacks. The diagnostic feature of passing blood and mucus without fecal matter is quite constant, as is the appearance of blood and mucus only on the examining finger after withdrawal from the rectum. Delay in getting the child to hospital is responsible for most fatalities. Other signs or symptoms, such as the sausage shaped mass, are immaterial. Without rectal examination and the blob of bloody mucus unstreaked by fecal matter which is passed on withdrawal of the finger, the diagnosis may be uncertain.

In the differential diagnosis, we have to consider three conditions:— Acute entero-colitis of babies, Henoch's or abdominal purpura, and prolapse of the rectum. The crucial point in the first is whether complete intestinal obstruction is present or not. In the second there is never a true intestinal obstruction and the age incidence is older than in intussusception. The rectum may prolapse in intussusception.

In children Appendicitis is the commonest serious abdominal disease. The most difficult problems occur in this condition. We know how serious it can be, if left undiagnosed, and because of this we are compelled at times to do the safest thing and open the abdomen. This should be resorted to only after every other means of diagnosis has been exhausted. Wilkie has pointed out the importance of the obstructive type of the disease which accounts for most of the fatalties, and that this type is most often overlooked until too late. Therefore it is this type which we have to be on our guard against. The symptoms of this type are the symptoms of intestinal obstruction; a definite history of onset of acute abdominal pain followed by nausea or vomiting. There is no peristalsis, and an enema gives no gas results. With such a picture we can make no other diagnosis. The safest procedure, then, is immediate operation. Even if there are no symptoms at the time we see the child it is the history of onset, along with the inability to obtain flatus from the rectum that decides us in opening the abdomen.

Many cases are very insidious before obstruction takes place. But when ever it occurs we invariably have these symptoms of abdominal obstruction. The public are now getting on to the fact that a purge is apt to bring on the obstructive type while otherwise it will likely resolve or localize with abscess formation.

When the appendix is pointing downwards into the pelvis the symptoms are sometimes rectal or urinary and both these types are easily diagnosed with a finger in the rectum, as the inflammatory area is in reach of the finger and

the parts are very tender to the touch. Frequency of bowel movements or of urination is usually complained of. Again when the tip of the inflammed appendix is near the gall bladder the symptoms are referred to that region and the lower abdomen may be clear of signs.

The process of eliminating other well known conditions, in doubtful cases, such as a perinephritic abscess, pyelitis, tuberculosis, etc., narrows down the field very often to the appendix. The previous history, the blood count, and especially the differential count, the mode of onset (it is gradual in perinephritic abscess), the position of pain and tenderness by abdominal and rectal examination, are some of the many methods by which the diagnosis is reached.

There are all types of virulence in this disease, chronic, subacute and various stages of the acute—many going on to resolution, usually only to break out at a later date. Due to one or many attacks resolving, scar tissue is formed which may press on nerves giving rise to referred pain and being diagnosed wrongly as tuberculous spine or hip. One case was diagnosed as hernia when the scar tissue was adherent to bladder. Such puzzles are usually cleared up by the process of exclusion during the routine examination. Unnoticed, slight attacks in early childhood account for such adhesions.

Most cases of acute appendicitis occur in children over 3 years of age with an acute onset of pain in the epigastrium, with vomiting or nausea following the pain. The abdomen is rigid all over and later the pain settles more in the right iliac region with rigidity. There is slight fever and a rapid pulse. The bowels are constipated and the child refuses food and wishes to lie down or go to bed. There are other cases with altogether different symptoms not even referable to the abdomen. In these cases only a routine examination will, with the exclusion of all other possible maladies, solve the problem. These are the cases which are not seen by the doctor until later in the disease, when the symptoms may be more definite but still difficult to interpret.

Such a case entered the Children's Hospital August 20, 1935, a girl 12 years old. Five days before admission she was at an acrobatic class at the Wanderers grounds and said she strained her side. During that time and till six o'clock the night of admission she said she had no pain in the abdomen, but only complained of dizziness, and lack of appetite. The whole thing was put down to a "touch of the sun". But six o'clock the night of admission she "shot" an attack of abdominal pain with vomiting. A doctor was called who sent the case immediately into hospital. In hospital there was soreness over the lower abdomen, especially in the left lower quadrant and none in the lower right. Temp. 103, pulse 130. No bowel action since onset of pain and no gas or fecal matter expelled on giving an enema. A rectal examination was painful and a resistance was felt in the pouch of Douglas. The abdomen was not rigid and could be palpated deeply all over. Blood count 30,000, urine nil, tongue nil. The patient appeared fairly well and comfortable. Without the history of onset with vomiting, and absence of gas results from the enema, the case would have been left for observation. But in the face of these two points, we felt driven to explore the abdomen at once. We found a gangrenous appendix and a ruptured appendix abscess with adherent omentum firmly surrounding appendix and adherent with it. This was a case of low grade inflammatory appendicitis, going on to abscess formation. When in the process, the appendix lumen became suddenly blocked producing obstruction with all the signs and symptoms of intestinal obstruction. The peculiar history was misleading, so was the low down pain on the left side, and

the apparent well being of the patient. It was an anomalous case with an element of uncertainty in the diagnosis at the time, but seemed clear enough afterwards. There are many such cases, all varying in detail and difficult to be sure of. The final test appears to be the inability to exclude appendicitis. A decision for operation in many such cases has saved many lives, and there has almost invariably been far worse pathology than expected. Pneumonia which develops near the diaphragm will simulate the onset of acute appendicitis in some cases so closely as to test the acutest diagnostician. Thread worms will simulate a virulent type of disease but with a higher temperature (105 often). This is so uncommon in appendicitis as to almost exclude it. The appendix is almost normal, with bunches of worms in its lumen, in these cases.

In chronic appendicitis, the traps which lie in wait for us are many, including: Round worms, Tubercular peritonitis of the plastic type; Hydronephrosis; Perinephritic abscess; Vesical calculus; Undescended testicle; Hairball; Brain tumor; Potts' disease of the spine, etc.

Volvulus is a rare disease in children. Its sudden severe onset, with at first no absolute obstruction, may cause delay in operating.

A Meckel's Diverticulum when it becomes inflamed, which it seldom does, simulates appendicitis and is treated in much the same way. Bands of adhesions cause obstruction or partial obstruction and in such cases a previous operative abdominal scar aids the diagnosis. In deciding treatment the enema, without flatus results, spells operation.

An obstructed Pylorus may be due to developmental abnormalities but is usually the result of Congenital Hypertrophic Stenosis. The latter does not show symptoms until the child is some weeks old, while the others begin to appear immediately after birth. Due to the modern revolutionary treatment by Rammstedt's operation the Hypertrophic stenosis is of more interest and importance, as early surgery returns these cases to normal. The vomiting beginning 3 to 6 weeks after birth, is painless, of the regurgitant type, and after every feeding. Peristalsis in the stomach may be seen passing from left to right and may be made more evident by kneading the stomach. The pylorus can seldom be felt except in the imagination. Constipation accompanies this condition. The wasting of congenital syphilis is different to that of stenosis and the therapeutic test can be applied if necessary.

Influenza may simulate appendicitis as pneumonia does but the enema helps to tell the difference. A ureteral calculus is perhaps the most difficult condition to separate from appendicitis as it may cause a reflex spasm of the bowel, but the slow pulse is our first string in distinguishing the two. Lastly, inflammed mesenteric glands usually, but not always, of a tuberculous nature, give rise to difficulty in diagnosis.

Dr. A. H. Ruffo has produced cutaneous cancer of face and ears in white rats by repeated exposure to sunlight. Some of the objections to his statements are: 1. Reasonable and well-controlled exposure to sunlight produces a beneficial action on health. 2. Sunlight is helpful in treatment of tuberculosis.

The Heart in Middle Life

By GERALD R. BURNS, M.D.

WHEN we mention the phrase "Heart Disease", we usually think of an individual who is confined to his bed or to his invalid chair. He is an individual upon whom is placed all manner of restrictions. Should he deviate one small fraction from the instructions concerning the curtailment of his activities, he will suffer severe, if not fatal consequences. Even to the untrained observer, such an individual appears ill. His face, body, arms and legs are swollen, his breathing is heavy and laboured, his color is bluish, his expression is anxious. He complains of the heavy oppression and of the sensations of fluttering within his chest, of his difficulty in breathing, and of his desire for air and for more air. Undoubtedly, such a person is suffering from Heart Disease. But there is another group, a larger group, whose members are drawn from the most active men and women of our communities, who are recognized generally as robust and healthy citizens, infrequent visitors to the doctor's office. Their untimely end comes as a distinct shock to their friends and associates.

In the first group we recognize the type of heart disease which is brought about by infection. The infection is usually Rheumatic, but may also be due to such conditions as Syphilis, Diphtheria and intoxications which follow goitre. Rheumatic heart disease is essentially a disease of the young and of early adult life, although its manifestations may be carried into middle life. It is by far the most important factor in the causation of Heart Disease. Unfortunately, however, our knowledge of Rheumatic Fever is limited and the control difficult. By all authorities it is looked upon as a specific disease and of infectious origin—that is, caused by some germ whose identity is unknown. It is a disease which has a special predeliction for picking out and for causing damage to the heart structures and to the blood vessels. In this respect it is well to point out that Rheumatic Fever is not essentially a disease of the joints, although frequently its presence in the body may be detected by sore, painful, swollen joints long before the heart signs are apparent. The inflammation of the joints clears up leaving the joints unaffected, but in its trail is left a heart which is damaged by the visit of this insidious and fleeting maurader. On the other hand there are types of Rheumatism—a better name is Arthritis—which can cause untold suffering, swollen and deformed joints and which cause no damage to the heart or to the blood vessels, even though the sufferer be within its toil all his life.

There is a very close relation between Rheumatic Fever and Tonsilitis—in fact, we can regard Tonsilitis as being first cousin to Rheumatic Fever. The Tonsil has for a long time been regarded with suspicion as the portal of entry of infection in Rheumatic Fever. For this reason, the medical profession has strongly advocated the removal of children's tonsils which are diseased. This procedure must be carried out, most assuredly before the infection has gained entrance into the body so that the best results may be obtained. Hence we have the doctor and the school nurse going through the schools and institu-

tions examining children and advising the removal of enlarged and diseased tonsils. By these means, not only are breathing defects corrected, and obvious foci of infection which hinder the child's development and nutrition removed, but also is prevented the occurrence of Rhematic Fever and hence is lessened the toll of heart disease in youth and in early adult life. There are also certain factors which may predispose or prepare the way for Rheumatic Fever. Such factors as poverty, nutrition, climate, ventilation, sanitation, housing and occupation, bear a similar relationship to Rheumatic Heart Disease as to Tuberculosis.

In the second group, we recognize a type of heart disease which we call degenerative. It is one in which the heart mechanism, instead of carrying on for the four score years, fails all too soon. We are reminded of the picture which Addison presents to us in the Vision of Mirza. As the travellers pass along the bridge, there seems to be a greater number of them falter and disappear through the traps into the waters beneath as the middle arches of the bridge are reached. So, too, the thoughtful observer views with grave concern the number of deaths between the ages of 45 to 60 as ascribed to heart disease. We exclude from this type of disease those infections which we have already mentioned under the Rheumatic group, because the patients coming within this category have either joined the majority before middle life has been reached, or having arrived at this goal have learned to live within the range of their heart reserve. We are now concerned with a type of heart disease, whose causation is obscure and complicated. There undoubtedly are many factors which bring it about. The numerous infections of childhood—the continued assaults of infections in youthful years from tonsils, teeth, appendix, gall bladder and pelvic organs, are now reaping their harvest on heart muscle and blood vessels whose youthful reserve and elasticity have withstood the continued assaults. But at this stage, the load has become heavier on the heart and blood vessels, with success, luxurious habits of ease have developed, overeating and injudicious eating and over drinking, over indulgence in tobacco, and the sum total of all those practices which we include under the heading of the stress and strain of modern living. We recognize these factors as probably factors causing the sudden catastrophe which strike men and women at an age when they are to all intents and purposes at their prime.

There is one important point to bear in mind and it is this—the majority of these cases are preventable. If men and women would only take the same care of their bodies as they do of their stock books and bank accounts, they would have an annual audit, as it were of their bodily assets.

The history in these cases is usually one of long duration, in spite of the fact that many of these individuals are proud in their boast of robust health and virility. There are frequently signs and symptoms which are undeeded or glossed over as being insignificant.

Many of these persons will recognize an increasing failure in response to exertion, hills and grades, which hitherto have been mounted with ease, are now made with exertion, attended by shortness of breath, a sense of constriction or tightness in the throat or chest, perhaps a cough. It is becoming more difficult to mount the stairs, walk against the wind, and to lie flat in bed at nights and more pillows are needed to help facilitate breathing. Symptoms such as these may be ascribed to Chronic Bronchitis, but this is a condition in the middle age which requires the greatest possible investigation to rule out an underlying heart or blood vessel disease. Again, there are those

who have what is looked upon as indigestion or flatulence after eating, particularly after eating heavy meals following exertion, either mental or physical. There may even be severe pain in the stomach region, radiating upwards to the chest, through the back or down the arm; such a pain may follow extra exertion as a strenuous game of golf, or running for a train or trolly car. Frequently these upsets are labelled indigestion by the unwary, but here again we sound the warning that indigestion, like bronchitis, in the middle life should be regarded with suspicion.

The successful treatment of this type of heart disease concerns itself more with methods directed towards prevention than with actual cure. Once the process of degeneration has established itself within the muscle of the heart and the walls of the blood vessels, we have a vicious circle set up by the hardening of the arteries with the concomitant elevation of the blood pressure, by enlargement and by failure of the heart, and by failure of the kidneys to eliminate toxic material from the body. To avoid a serious heart disaster perhaps a fatal termination, one must revise the whole tenure of one's ways respecting habits of work, diet, exercise, and especially indulgence in worry. Our modern knowledge of heart disease has done a great deal for the man or for the woman who would otherwise be condemned to an uncertain life of invalidism—to-day such a person can live a happy, successful existence with the knowledge, by means of proper medical advice, of knowing how to live with the heart he has. We repeat with emphasis the necessity of periodic or yearly examination.

FIRST BIBLE IN ENGLAND PRINTED IN 1535.

CHICAGO, October 4—One of America's seventeen copies of the first edition of the Bible in English was on public exhibition in celebration of its 400th birthday to-day.

Professor Edgar J. Goodspeed of the University of Chicago, famous for his translation of the New Testament, stated that in all the world there existed by 44 of the "Coverdales," the name by which they are known. An unknown 16th century printer four centuries ago to-day completed his work of transcribing the Bible into English and wrote:

"Printed in the yeare of oure Lord MDXXXV and fynished the fourthe daye of October."

The first Bible in English, "strangely enough," said Prof. Goodspeed, "was not printed in England. Authorities conceded one of four cities on the continent—Antwerp, Frankfort, Zurich or Basle—as its source."

Popularly the edition of 1535 was ascribed to Bishop Miles Coverdale of Exeter, England, when it derived its name.

Dr. Goodspeed called the "Coverdale" Bible the precursor of the latter "King James' Version," widely used in English speaking lands.—*Sydeny Post-Record*, October 5, 1935.

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THOUGHTS OF OSLER.

THERE is an Indian tradition that, amongst the Islands of the Blessed are some, specially favoured and endowed, where the spirits of great men may find pleasant environment and pursue the activities that gave them most joy in their earthly existence. It is easy to fancy such a celestial habitation; and to see at the head of a busy, laughing band of eager truth seekers, the most cheerful and active of them all, gathering up new phenomena, linking them into principles and practices and, all the while, glowing in the ecstasy of creative sapience. This man would be William Osler; of whom it may be said (to change Dr. Johnson a bit) that he left no phase of medicine untouched and touched nothing he did not adorn.

In the realm of original research, Osler made no such contributions as Pasteur, Lister, Banting and others. He came at a time when some of these discoveries were in the raw, and what was needed most was to comb them out, add what was worth keeping of the old stock and weave them into a new fabric of therapeutics. Much effort of his early professional life was directed to developing the old material by adding new data of his own, breathing into it the logic of cause and effect and endeavouring to supplant empirics by reason, so that our profession, through the eyes of real science and real art, could look the world confidently in the face. To do all this he had to be a great teacher, and this Osler was—one of the greatest in a brilliant band that extends from Hippocrates to our own time.

With all his brilliance of literary expression, which made his spoken and written word a delight, he was one of the most practical of men. He hated the easy going guess work which treated the patient's symptoms with a flood of medicines, leaving the diagnosis either to drown or to emerge as best it could from the intemperate torrent of drugs. The system that taught medicine from a rostrum with Ciceronian eloquence and florid periods he supplanted by bedside clinics and post mortem observations; so that the student, instead of looking at highly colored pictures of disease, gazed into the depths of disease itself. He made a real bid for the truth, and found enough to change the old order of diagnosis and therapeutics into a simple and rational one.

Drugs were assigned to a tiny corner of the big kingdom they previously occupied.

Of the endowments Osler left us, one of the most useful is his simplified therapeutics and, particularly, the proper place for drugs in disease. One hopes that it is a rare thing to-day for a doctor to prescribe a bottle for the appetite, one for a tonic, some liniament to rub on sundry parts, something "to thin the urine" and a box of pills for the bowels. We have known a patient to emerge from a doctor's office similarly equipped. A drug soaked public has little discriminating sense in rational therapeutics. There may still be places in our own Nova Scotia where a William Osler might starve. What do you think? The fraternity of our esteemed friends, the Druggists, would be loathe to boost him. Theirs is a business; ours, at the worst, is but partly so. We are sound at the core; but the core is not necessarily the most marketable part of our professional fruit.

If you have any doubt about the public's addiction to drug remedies read the Minister of Health's statement. Two and a half million dollars spent yearly in Nova Scotia on so called patent and proprietary medicines! Figure this out with a population of little over half a million and add to that your estimated cost of the regularly prescribed drugs for the year. An interesting article would be one dealing with the influence of indiscriminate medicines upon the social, economic and business life of Nova Scotia. It might be possible to make such an article non political. There seems to be something here for public health to do. This is difficult, or impossible, without the staunch support of the medical profession.

Meanwhile, it is good for our profession and if possible, too, the public, to hold to the example of this great hearted lover of men and truth. In Osler teaching and spirit lie inspiration, sanity and nobility. Across the years we may still hear the words of an apologia few men could utter with such sterling consistency: "I have loved no darkness, sophisticated no truth, nursed no delusion, allowed no fear".

G. H. M.

Congratulations to Dr. and Mrs. Benvie, who, on September 10th, celebrated their arrival at another milestone on the road of marital happiness.

CASE REPORTS

Hemmorrhage of the Suprarenal in the New Born Infant.

ON April 15, 1935 a female infant C. T., weighing 9 lbs. 9 ozs., was born in the Grace Hospital, Halifax, to healthy parents. The mother, a primipara, had reported for examination at regular intervals, and was in excellent health. The urine and blood pressure had been normal throughout pregnancy. There was no history of tuberculosis or syphilis. Labor began at the anticipated time and continued for 60 hours, the mother being relieved by morphine and hyoscine. Low forceps were used to terminate labor.

The baby cried lustily as soon as delivered and on examination appeared to be normal and healthy. For thirty hours after birth the baby was put to the breast at 6-hour intervals. At the end of this time, when taken for its regular feeding, it refused to nurse and was found to have a weak, feeble cry. Its color had changed from its previous rosy, healthy appearance to an ashen gray. The pulse was thready and weak. The child appeared to be suffering from severe shock with hemorrhage. There were no convulsions, no twitching, and no paralysis.

On palpating the abdomen, a boggy mass was felt on the right side near the midline. This mass was about the size of an egg and seemed to be in the region of the kidney. Suprarenal hemorrhage was diagnosed. 40 c.c. of blood was given intra muscularly. The infant died within three hours of the onset of the symptoms.

A port-mortem was performed by Dr. Ralph Smith and a summary of the findings was as follows:

Head: The brain showed small subarachnoid blood clot over the left cerebral hemisphere. The falx and tentorium were intact.

Abdomen: There was a small amount of free blood in the peritoneal cavity and the right side was a blood clot, which extended from the liver to the pouch of Douglas, and laterally to the midline. (12 cm. x 6 cm.)

Adrenals: When the blood clot was cleared away and the right adrenal exposed a transverse rupture was noted on its anterior surface. The medulla appeared softened and necrotic. The left adrenal was of normal size. On section it was somewhat congested and the medulla appeared softened. The other organs showed no abnormality.

Histological Examination: The adrenal cortex, for the most part, showed no change. In some places the deeper layers of the cortex were separated by hemorrhage. The medulla was congested and in many areas it was destroyed by hemorrhage.

Autopsies show that suprarenal hemorrhage is not uncommon in the new born. Very few cases have been diagnosed before death and, of these, very few have recovered.

Among the cases described, two, which recovered, show the variety of symptoms which may occur, and are briefly, as follows:

At Coney Island Hospital;[1] in 1931, a female was born to a multipara, who had shown evidence of toxaemia but whose symptoms had cleared up

before birth. Labor was of 4 hours duration. The infant was cyanotic at birth, due to difficulty in delivering the shoulders, and remained cyanotic for about two hours. The child was normal at birth, but the following day developed a rise of temperature, which reached 105 degrees F. on the third day. The infant was critically ill. A tumor mass was found in the region of the left kidney. The temperature gradually returned to normal but the mass did not completely disappear until four weeks later.

In the Chicago Lying-In Hospital;[2] in 1924, a male was born to a quadripara. The first stage of labor was 12 hours, but the delivery was precipitate as the mother was delayed in getting into hospital. The baby weighed 12¼ lbs., cried at once, and showed no external signs of asphyxia. The infant was vigorous and appeared normal until the fourth day, when he became restless and vomited several times. X-ray examination with barum enema showed obstruction to the descending colon. There was fecal vomiting and rapidly progressing anaemia, and increase in the size of the mass. At operation a large haematoma was found with intact suprarenal capsule. The blood tumor was removed, a persistent bleeding point on the inner pole of the suprarenal gland was ligated, and the infant recovered.

Symptoms. In cases recorded, the symptoms vary considerably. This depends to some extent on the severity of the hemorrhage, large haematomas causing marked shock with rapid pulse, pallor, etc. Sometimes there is vomiting and diarrhoea. Several cases have had marked elevation of temperature. Cyanosis, and purpuric hemorrhages have been noted, and one case of icterus due to compression of the common bile duct. Respirations are usually rapid. There is always a palpable mass in the abdomen. When there has been time for a chemical examination of the blood, a low blood sugar and nitrogen retention has been found.

Etiology. In the new born infant the suprarenal gland is almost entirely cortex. At birth the gland is a relatively large organ, being about one-third the size of the kidney. Immediately after birth, the entire cortex rapidly degenerates. The medulla, at this time only a small collection of cells, starts to grow out into the cortex, which is now beginning to develop into its adult form. The whole gland is highly vascular. Small hemorrhages usually occur, which sometimes become massive, thus destroying the whole framework of the gland.

Just what cause brings about these changes is not clearly understood. It has been suggested that the withdrawal of the female sex hormone, which has bathed the fetal tissues during pregnancy, may cause the cortical necrosis and perhaps the hemorrhages in the same way that the sudden withdrawal of the corpus luteum hormone causes the endometrial necrosis and hemorrhage. It is possible, too, that difficult labor, with artificial respiration often necessary, is an additional factor. In some cases, thrombosis of the suprarenal veins by bacterial infection may be a factor.

Treatment. A review of the literature on this subject shows that the hemorrhage is usually so severe as to render successful treatment impossible. In most of the cases which have recovered, however, the onset of the hemorrhage has been more gradual, and recovery has apparently been spontaneous.

In the case described above as having been treated successfully by operation, the hemorrhage was of slow onset. Obstruction of the colon was the indication for operation. One case;[3] with a temperature of 103 degrees F., was

improved somewhat by the injection of 60 c.c. of whole blood intragluteally. But the repeated injection of a cortical hormone, interrenin, was given the credit for bringing about the eventual recovery of the infant.

The injection of female sex hormones has not yet been recorded. This experiment would appear to be worth a trial, even though the etiology has not been clearly established.

In view of the fact that, in the majority of cases, the distressing symptoms from which the infant is suffering can be attributed to loss of blood, the greatest indication for treatment is immediate blood transfusion. This should be done intravenously. Of four cases reported by Arnold;[4] two with gradual onset of symptoms recovered by this treatment. In my own case, however, the infant died before arrangements could be made to carry out intravenous transfusion.

A. M. MARSHALL, M.D.

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"Stomach surgery requires training and experience, and it will be found that with increasing experience cases that formerly were condemned as hopeless may sometimes be salvaged. This, of course, may mean a mounting rate of operative mortality, but it will also mean an increased total number of cures and a larger number of cases that can be considered resectable."—Horsley.

Social Welfare Divisions in Soviet Russia.

Abstracted by U. S. Children's Bureau from Sotzialnoye Obezpechenie, Moscow. Social welfare divisions have been organized in the municipalities of Soviet Russia under a Government decree of August 20, 1934. These divisions are engaged in educational work, familiarizing the people with social welfare legislation and with the importance of its enforcement. They assist the local welfare organizations in relief work for families and individuals, with particular attention to children. They see that pensions and allowances are granted in accordance with the law; they are active in improving the living conditions of invalids and of children, particularly those who are physically or mentally handicapped; and they participate in work for wayward children.

Minutes of the Annual Business Meeting

Continuation of Business Session of the 82nd Annual Meeting of the Medical Society of Nova Scotia held at the County Court House, Sydney, N. S., July 3rd, 1935, at 10 P. M.

Dr. McLeod, as Chairman, said he would like to extend his appreciation of the very excellent paper given by Dr. J. C. Meakins and that the Society did not usually extend any formal vote of thanks except through the Chairman.

Dr. Routley then gave a comprehensive talk on the merger of the Medical Society of Nova Scotia with the Canadian Medical Association, followed by a talk by Dr. Meakins.

Dr. Hartigan thought that the matter should be taken under advisement by a Committee of the Society and given consideration, stating that he had been a member of the Canadian Medical Association and the draft came each year, as the Medical Society of Nova Scotia draft came each year, and was paid, but the time came when the Canadian Medical Association draft did not come, and he thought there was laxity in the central office.

Dr. Meakins stated he objected to drafts and would much rather have a bill, and that the Council sent out bills.

Dr. Routley advised that they had in the Association two distinct files, those who have intimated they did not want a draft, about 40%, to which accounts were sent, and about 60% to whom drafts were sent, and he would see that Dr. Hartigan's name was added to the latter list.

Dr. Eric MacDonald thought that the greatest danger would be the likelihood of losing members instead of gaining them as many men claimed they were doing all they could by supporting their local Society, and that we should give it great consideration before any steps were taken which would weaken our own Society.

Dr. Benvie: "I do not agree that we should consider to any great extent whether we shall join the National Association or we shall not. We are getting new legislation, local and Dominion, which affects the medical profession. We are going to have State Medicine soon and we have got to have control of that legislation. I move that the Nova Scotia Medical Association will join with the Canadian Medical Association as a Branch and be hereafter known as the Canadian Medical Association Nova Scotia Branch."

Dr. O'Neil asked what became of the surplus cash and Dr. Routley replied that all funds were retained by the local Societies.

Dr. O'Neil: "I would like to second the motion."

Mr. Chairman: "The motion is out of order. We already have notice of motion that the matter be dealt with at a future meeting."

Dr. Bazin: "I just rise to correct a typographical error. The Nova Scotia Society is now a Branch and it should be Nova Scotia Division. Under the new bye-laws provided by the Canadian Medical Association it will become a Division represented in Council by members appointed by the Provincial Medical Association. It is just a little error as regards interpretation of a

word, but it is well to frame the report in such a way that there can be no mistake in the proposed alteration of any bye-laws or any charter."

Dr. Lynch: "What form would have to be gone through to make any change in name?"

Dr. Routley: "I believe through the Lieutenant-Governor of the Province or his Department; or a vote by members of the Society, in some instances two-thirds and in some instances just a majority. I think in most charters it must be done along that line."

Dr. Dunbar: "We could incorporate such changes in the bye-laws as confirm to the new division of the Canadian Medical Association; it would save time at our next meeting."

Dr. Benvie gave a notice of motion; "At the next annual meeting I shall move that the report of the Executive Committee relating to federation in the Canadian Medical Association become effective in accordance with the plan which is to be submitted by a special Committee of the Association which has been appointed for that purpose and that the Bye-laws of the Association be amended in such a way as may be necessary to complete effect to this change."

Dr. Schwartz: "In all probability that would be very wise. Supposing it was hurried, would it not be much better if we waited a year and let it soak in, as a good deal of discussion has to be done beforehand."

Dr. Grant: "Many of the executive have been thinking of this thing since the meeting of the Halifax Branch last November, and last evening the executive discussed this for fully an hour or two. The following resolution was passed: 'That the Executive approve of the principle of merging the Medical Society of Nova Scotia with the Canadian Medical Association to be known as Canadian Medical Association Nova Scotia Division, and that a committee of five and the President of each Branch Society be appointed to study the matter and report back at the next general meeting.' When it comes to the question of the Committee our executive is so large it is practically impossible to get them together during the year. It is going to entail a lot of work. Dr. Gosse worded this resolution and he intended, I believe, that the five members be Halifax members, but that in addition each President of each Branch be a member of that Committee, and that one representative of this Committee would visit each Society during the year and report next year at the general meeting."

Dr. Carter: "If we decide to become a branch of the Canadian Medical Association and perhaps two or three Branches decide to become members and other Provinces decide not to become Branches, does that mean some Branches will be members of the Canadian Medical Association, and others not? The matter should be universal."

Dr. Routley: "They will only become a member if the majority join."

Dr. Dunbar: "I do not agree with Dr. Carter that if they do not all come into confederation we might hold out that there might be an incentive for others to hold out. I think it would not be wise to put in any motion that if they all come in we will come in. Let each Province use his own best judgment."

Dr. Lynch moved the adoption of the suggestion of the Excutive which was seconded by Dr. Benvie. Carried.

The Chairman advised that this Committee would be appointed by the Nominating Committee of this Society.

Dr. Meakins: "I would like to take the privilege of merely stating on my own behalf and I am sure on behalf of all our Societies throughout Canada, to compliment you on your great wisdom this evening in accepting this report. We want you to think it over carefully."

Meeting adjourned at 11.10 P. M.

Continuation of the 82nd Annual Meeting of the Medical Society of Nova Scotia held at the County Court House, Sydney, N. S., on July 4th, 1935, at 12.15 P. M.

It was moved by Dr. D. A. McLeod of Sydney and seconded by Dr. Murphy of Halifax that Dr. F. G. MacAskill, President of the Cape Breton Medical Society, be Chairman for the day. Carried.

In the absence of the President Dr. Grant read the Presidential address.

Following the reading of the Presidential Address the report of the Nominating Committee was presented as follows:

President—Dr. R. M. Benvie, Stellarton.
1st-Vice President—Dr. J. R. Corston, Halifax.
2nd Vice-President—Dr. Allister Calder, Glace Bay.
Secretary—Dr. H. G. Grant, Halifax.
Treasurer—Dr. W. L. Muir, Halifax.

Executive Committee—The Executive Committee shall consist of the above named officers together with such other members as shall have been nominated to that office by the various Branch Societies always provided that such members are in good standing in this Society.

The Committee on the Cogswell Library—Dr. J. R. Corston, Dr. G. H. Murphy, Dr. W. L. Muir, Dr. A. McD. Morton, Dr. N. H. Gosse, all of Halifax.

Council C. M. A.—Dr. J. J. Macdonald, New Glasgow; Dr. W. N. Rehfuss, Bridgewater; Dr. J. V. Graham and Dr. K. A. MacKenzie, Halifax; Dr. J. C. Morrison, New Waterford, President and Secretary, ex officio.

Narcotic Drugs—Dr. D. W. Archibald, Glace Bay; Dr. M. J. Carney and Dr. A. R. Morton, Halifax.

Legislative Committee—Dr. H. A. Creighton, Lunenburg; Dr. W. Alan Curry, Halifax.

Editorial Board, Nova Scotia Bulletin—Dr. N. H. Gosse, Dr. A. L. Murphy and Dr. J. R. Corston, all of Halifax.

Cancer Committee—Dr. N. H. Gosse, Dr. S. R. Johnston, Dr. H. W. Schwartz, all of Halifax.

Public Health Committee—Dr. G. Victor Burton, Yarmouth; Dr. D. A. Campbell, Bridgewater; Dr. C. E. A. deWitt, Wolfville; Dr. A. E. Blackett, New Glasgow; Dr. Freeman O'Neil, Sydney.

Board of Management for N. S. Society for Cripple Children—Dr. L. R. Morse, Lawrencetown; Dr. J. B. Reid, Truro; Dr. M. J. Macaulay, Sydney.

Historical Medicine—Dr. J. K. McLeod, Sydney; Dr. P. M. Carter, Sydney; Dr. M. D. Morrison, Halifax. (This committee was afterwards changed).

Workmen's Compensation Board—Dr. J. G. B. Lynch, Sydney; Dr. H. K. MacDonald, Halifax; Dr. W. A. Hewat, Lunenburg.

Committee to Investigate Nursing Conditions in Nova Scotia and in Nova Scotia Hospitals—Dr. C. A. Webster, Yarmouth; Dr. H. B. Atlee, Halifax; Dr. J. S. Brean, Mulgrave.

Members Advisory to Editorial Board of C. M. A.—Dr. S. J. McLennan and Dr. C. W. Holland, both of Halifax.

Special Committee on relation of Medical Society of Nova Scotia to Canadian Medical Association—Presidents of local Societies; Dr. J. R. Corston (Convenor); Dr. G. H. Murphy, Dr. K. A. MacKenzie, Dr. H. B. Atlee and Dr. G. R. Burns, all of Halifax.

Place of next meeting—Halifax, N. S.

Dr. M. R. Elliott moved the adoption of this slate which was seconded by Dr. Roy. Carried.

The following Committee to consider the Presidential Address was appointed by the Chairman—Dr. H. W. Schwartz, Halifax; Dr. J. J. Macdonald, New Glasgow; and Dr. D. J. MacKenzie, Halifax.

Dr. K. A. MacKenzie stated that the Committee to consider the Report on Historical Medicine had met and talked the matter over and they did not consider there was any need of spending funds for a prize for the best historical paper and therefore they did not recommend a prize for such a paper. They would recommend a Committee on Historical Medicine be appointed from Cape Breton to consist of Dr. W. W. Patton, Chairman, Dr. J. C. Morrison and Dr. L. W. Johnstone.

Dr. Elliott: "We would be very glad to withdraw our recommendation of nominations for Historical Medicine. I move that the report of Dr. Scammell be received, that the recommendation for a prize award be not made and that the members of the Historical Committee be as recommended by Dr. MacKenzie." Seconded by Dr. Benvie. Carried.

It was moved by Dr. H. K. MacDonald, seconded by Dr. J. C. Ballem that the Secretary cast one ballot. Carried.

The golf prizes were then presented by Dr. Roy.

Best gross score—Dr. W. Alan Curry, Cup.

Lowest net in the same class—Dr. H. K. MacDonald, Cup and 6 Golf Balls donated by Imperial Publishing Co. Ltd.

Senior Class, lowest gross—Dr. J. C. Meakins, Silver Pitcher.

Runnerup in that competition—Dr. W. L. Muir, Silver Tray.

Sealed Hole—Dr. J. C. Meakins, Humidiguide presented by E. B. Shuttleworth Chemical Co.

Long Driving—Dr. J. J. Macdonald, Silver tray.

Treasurer's Report. The Financial Statement was read by the Treasurer, Dr. Muir.

FINANCIAL STATEMENT.

MEDICAL SOCIETY OF NOVA SCOTIA.
YEAR 1934-35.

July 2, 1934.

RECEIPTS.

Balance Cash on Hand Savings	$ 392.57	
Current	1,034.84	
		$1,427.41
Annual Dues		2,275.50
Receipts from Medical Bulletin		2,237.70
Interest on Savings Account		11.17
		$5,951.78

DISBURSEMENTS.

Cost of Medical Bulletin		$1,806.86
Salaries		1,600.00
Travelling Expenses		116.05
Sundry Expenses		211.02
Cash on Hand, June 30/35:		
Savings Bank	$ 703.74	
Current Account	1,514.11	
		2,217.85
		$5,951.78

PROFIT AND LOSS STATEMENT.

Dues		$2,275.50
Interest		11.17
Medical Bulletin		430.84
		$2,717.51
Less Costs:		
Salaries	$1,600.00	
Travelling Expenses	116.05	
Sundry Expenses	211.02	
		1,927.07
Net Profit for Year		$ 790.44

COGSWELL LIBRARY FUND.

MEDICAL SOCIETY OF NOVA SCOTIA.
YEAR 1934-35.

RECEIPTS.

Balance Cash on Hand July 2, 1934	$ 17.10
Interest on Bank Balance	3.31
Income from Bonds	262.50
	$ 282.91

DISBURSEMENTS.

Dalhousie University	$ 275.00
Balance Cash on Hand July 2, 1935	7.91
	$ 282.91

Dr. Dunbar stated it was a pleasure to move the adoption of this report which was seconded by Dr. A. F. McGregor. Carried.

Secretary's Report. The Secretary, Dr. H. G. Grant, then read his report.

The Annual Report of the General Secretary for the year ending June 30th, 1935.

1. *Membership.* The number of active members for 1934-35 is 218, the honorary membership 17, giving a total of 235. The number of registered physicians practising in the Province is 449. The active membership for this year remains practically the same as for last year.

The same method of collecting dues was followed this year as in the past. During the first week of February drafts were sent out to all our members through the Royal Bank of Canada. In addition to this a personal letter was sent by your Secretary during May to all members who, up to that time, had not paid their dues. There were only one or two responses to this second notification, although it went to 120 Doctors.

There have been no recommendations for honorary membership received this year.

2. *The* BULLETIN has had another successful financial year. The money received from advertisements was sufficient to pay the cost of printing, incidental expenses and still show a small profit. The advertising has, on the whole, increased. A few of the firms discontinued during the year, but the number of new advertisements obtained more than made up for the loss. One of the difficulties in securing advertisements for the BULLETIN is that most of the pharmaceutical firms doing business in Nova Scotia have headquarters in either Montreal and Toronto and consequently the only way to reach them is by correspondence.

(The members stood while the following names were being read):

3. *Obituary.* The following is a list of the members who passed away during the year:

Francis J. A. Cochrane, M.D., at Toronto on October 24th, 1934. Dr. Cochrane was born at Scotch Village, N. S., and graduated from Bellevue Hospital, New York, and took post-graduate instruction at Guy's Hospital, London. He practised at Sydney Mines and during the World War was connected with the Cogswell Street Military Hospital, Halifax; he then moved to Grand Manan N. B., and from there to Toronto.

William Rockwell, M.D., Jefferson Medical College, 1886, died at Amherst, N. S., on September 15th, 1934. Dr. Rockwell practised at River Hebert, Cumberland County, from the time of his graduation until his death.

Edmund Oliver Hallett, M.D., McGill University, 1885, died at Weymouth, N. S., on September 3rd, 1934. Dr. Hallett was born November 19, 1860, in Sussex, N. B., the family subsequently moving to Truro, N. S. He started his medical career in D'Escouse, C. B., and moved a few years after to Weymouth, where he practised until his death. Dr. Hallett was President of the Medical Society of Nova Scotia from 1929 to 1930, and at the time of his death was an Honorary Member of the Society.

Clarence F. Moriarty, M.D., Dalhousie Medical School, 1925, died at Annapolis, Maryland, on January 14th, 1935. Dr. Moriarty was born in Truro, received his education in Halifax and went overseas with No. 7 Canadian Stationary Hospital, Dalhousie Unit. After graduation he occupied the post of County Health Officer in the States of Virginia and Maryland and for a time served with the Rockefeller Foundation in the Philippines.

John McCulloch Gourley, M.D., Dalhousie Medical College, 1884, died at Dartmouth on December 11th, 1934. Dr. Gourley was born at Upper Stewiacke in 1854 and taught school for several years before studying medicine. After graduation he practised two or three years at Lord Northcliff's plant at Grand Falls, Newfoundland, from there moving to Sheet Harbour where he practised for over forty years.

Francis Alexander Roberts Gow, M.D., died at Halifax, February 13th, 1935. Dr. Gow was born in Southsea, England, studied at King's College, Dalhousie University and Trinity Medical College in Toronto, graduating in 1889. He practised in Halifax and Dartmouth, went overseas in 1915 as medical officer with the Sixth C. M. R., and in recent years was surgeon on Canadian National "Lady" Liners.

James Ritchie Robertson, M.D., McGill University, 1925, died at Port Morien on February 27th, 1935. Dr. Robertson practised for a number of years in Amherst and from there moved to Halifax.

Walter Tremain Purdy, M.D., McGill University, 1913, died in Montreal, March 21st, 1935. Dr. Purdy was born in East Amherst in 1886, and was educated in the Amherst schools, taking his Arts course at Mount Allison University, and was the Gold Medallist in his graduating class at McGill. After an internship at the Royal Victoria Hospital he practised in Amherst until his death.

Charles W. Stramberg, M.D., Dalhousie Medical School, 1910, died at Trenton, N. S., on May 18th, 1935. Dr. Stramberg was born in River John. After his graduation he practised in Northport, Cumberland County, and Walton, Hants County, then moved to Trenton, N. S., where he practised for twenty-two years.

Colonel Nathaniel MacDonald, M.D., Dalhousie Medical School, 1906, died at Sydney Mines, May 22nd, 1935. Dr. MacDonald practised at Sydney Mines from graduation until his death. He enlisted in the Royal Army Medical Corps at the outbreak of the Great War, later transferring to the Canadian Army Medical Corps. He also participated in the Boer War, enlisting in the Mounted Rifles and the R. C. R.

John Ellery Lardner Pollard, M.D., died at Hantsport, June 20th, 1935. Dr. Pollard was born in Lancashire, England, and was educated at London and Edinburgh, graduating in 1894, and for many years practised in England. He came to Canada in 1923 and settled in Hantsport.

William Patrick Mackasey, M.D., Dalhousie Medical School, 1914, died at Montreal, June 20th, 1935. Dr. Mackasey was born in Moncton, N. B., in 1882, and was educated there, afterwards teaching school in Halifax and Sheet Harbour, and then entered Dalhousie Medical School. After interning at the Victoria General Hospital for a year he went overseas in the spring of 1915 and served in the British Medical Corps for three months, then going to the Mediterranean on a hospital ship and served at Salonika. He later went to German East Africa in charge of a field ambulance detachment. He returned to Canada and practised in Halifax and in 1922 was appointed Pensions Medical Examiner.

John Locke Churchill, M.D., McGill University, 1896, died at Dartmouth, June 22nd, 1935. Dr. Churchill was born at Lockeport in 1872, graduated from Acadia University. He later took post-graduate studies in New York. He began his practice in Halifax and was at one time Chairman of the Halifax Board of Health, and was also a member of the Dalhousie Medical Faculty.

In January he was appointed Medical Superintendent of the Nova Scotia Hospital.

4. *The Canadian Medical Association.* Your Secretary has been in close contact with the Canadian Medical Association most of the year. Communication has been in connection with the report of the Committee on Economics of the Canadian Medical Association, and also their proposal that the Medical Society of Nova Scotia merge with the Canadian Medical Association changing its name to Canadian Medical Association, Nova Scotia Branch. Every member of our Society has been mailed a copy of the report of the Committee on Economics. The Canadian Medical Association have asked for an opinion on this report at our annual meeting. In connection with the merger with the Canadian Medical Association, Dr. J. S. McEachern, of Calgary, the past president of the Canadian Medical Association, and Dr. Routley, the Secretary, addressed a full meeting at Halifax in November, 1934, at which several members of the Executive of the Medical Society of Nova Scotia from outside of Halifax attended. The Halifax Branch gave Dr. McEachern a sympathetic hearing and passed a resolution approving of the principle, submitting his proposition to the Medical Society of Nova Scotia for consideration and action. Dr. J. C. Meakins, the President of the Canadian Medical Association, and Dr. T. C. Routley, the General Secretary, will address the Executive and also the general meeting on the subject.

5. *Branch Societies.* This year your Secretary visited the Eastern Counties Medical Society at Antigonish, the Western Nova Scotia Medical Society at Yarmouth, and also during the winter the Cape Breton Medical Society at Sydney, to make arrangements for the annual meeting. The following resolution which was unanimously passed at the Annual Meeting of the Western Nova Scotia Medical Society, held at Yarmouth, May 27th, 1935, was forwarded to your Secretary for consideration by the Executive and members of the Medical Society of Nova Scotia:

> Resolved that our Association go on record as being strongly opposed to the present manner in which medical fees are denied Physicians for the treatment of the indigent poor; also that our Association is unanimously in favor of any form of Health Insurance which is acceptable to the majority of the members of the Nova Scotia Medical Society, having in mind the general principles covering this matter as suggested in the recent report of the Economic Committee of the Canadian Medical Association.

6. *The Annual Meeting.* The first plans for the scientific part of our programme were made at a meeting at Halifax composed of the President sitting with the Halifax members of the Executive and several other prominent members of our Society. Final plans were made by your Secretary after consulting with members of the Cape Breton Medical Society, at a special meeting held during the winter. Three speakers have been secured from outside the Province, representatives are coming from New Brunswick and Prince Edward Island, and two papers will be given by members of our Society. It was deemed necessary to put in an additional period for business in this year's schedule. The Society is indebted to the Medical Society of Cape Breton for the keen interest they have taken in the annual meeting and for the entertainment they have arranged for the members and their families during their visit to Sydney. The following firms have contributed toward the entertainment and amusement at the annual meeting:—

Imperial Publishing Co. Ltd	6 golf balls
Ingram & Bell, Ltd	$10.00
Mead Johnson & Co. of Canada Ltd	10.00
Laboratory Poulenc Freres of Canada Ltd	10.00
A. Wander, Ltd	10.00
Ciba Company, Ltd	10.00
The E. B. Shuttleworth Chemical Co. Ltd	Humidiguide
J. F. Hartz Co. Ltd	10.00
Parke, Davis & Company	10.00
Charles E. Frosst & Company	10.00
Abbott Laboratories	10.00
John Wyeth & Brother, Inc	5.00
Ayerst, McKenna & Harrison, Ltd	10.00
National-Canadian Drugs Ltd	10.00
Mallinckrodt Chemical Works Ltd. of Canada	10 lbs. of Ether.

Last year I referred to the efficient services of our clerical secretary, Mrs. M. G. Currie. Her salary is at present $25.00 a month. At our annual meeting of last year she was granted a bonus of $100.00. The work necessary to publishing the BULLETIN, the copying of manuscripts, the arrangement of advertising matter, and correspondence in connection with Society matters, is worth much more than $25.00 per month. I would recommend therefore that, if the Society finances warrant it, her salary be increased to $40.00 per month.

Respectfully submitted,

(Sgd.) H. G. Grant.

It was moved by Dr. Dunbar and seconded by Dr. Benvie that this report be adopted. Carried.

Dr. Grant stated that last year Dr. Atlee gave notice of motion that instead of following the present method of having the accounts audited, that the Society appoint an auditor. This year he presents his motion in writing:

> That the Nova Scotia Medical Society appoint an auditor at a fee not exceeding $50.00 (Fifty Dollars) to audit the Society's accounts each year.

This was taken up by the Executive Tuesday evening and the following resolution was passed: "That the Executive consider the present arrangement adequate and that Mr. M. L. Bellew of Halifax be appointed auditor at a salary of $25.00."

It was moved by Dr. Elliott and seconded by Dr. Granville that the Executive's report regarding an auditor be concurred in. Carried.

Dr. Gosse gave notice of motion that at the next annual meeting he would move that Article 7 in the bye-laws regarding auditors be rescinded and the resolution governing the appointment of a special auditor be inserted instead. Seconded by the Chairman.

Meeting adjourned at 1.05 P. M.

Continuation of the Business Session of the 82nd Annual Meeting of the Medical Society of Nova Scotia held at the County Court House, Sydney, N. S., July 4th, 1935, at 4.20 P. M.

The following letter was read by Dr. J. J. Macdonald:

Sydney, N. S., July 4th, 1935.

Dr. D. McNeil,
Glace Bay, N. S.

Dear Doctor:—

To-day at the annual meeting of the Medical Society of Nova Scotia we were appointed a Committee to write you expressing the Society's sincere regret that you are unable to attend and preside at our meetings as our esteemed President.

We are deeply conscious of the keen interest that you have always taken in the welfare of our Society. We felt that last year when we elected you to the honourable position as President of the Medical Society of Nova Scotia we were placing the welfare of our organization in very capable hands. We appreciate the fact that it is a matter of regret to you that you are not able to attend the meetings, but we know that your thoughts are with us and you will be glad to hear that largely through your efforts a very comprehensive programme has been arranged and is being successfully carried out.

You may rest assured that you have the sincere sympathy, frequently and fervently expressed, of every individual member during your illness.

Very sincerely,

(Sgd.) J. J. MacDonald.
P. McF. Carter.
A. McD. Morton.
Committee.

It was agreed that this letter be sent to the President and the Secretary was instructed to forward same.

Dr. Lynch reported that he and Dr. A. McD. Morton, who was the only other member of the Workmen's Compensation Board Committee in Sydney, had met and after seeing other men he would not acquiesce to the report as drafted, so he moved that the Workmen's Compensation Board report be sent to the Legislative Committee, which was seconded by Dr. O'Neil. Carried.

The Chairman appointed Dr. K. A. MacKenzie and Dr. N. H. Gosse, both of Halifax, to audit the Treasurer's report.

Meeting adjourned at 4.30 P. M.

Department of the Public Health

PROVINCE OF NOVA SCOTIA

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

MINISTER OF HEALTH - - - - HON. F. R. DAVIS, M.D.,F.A.C.S., Halifax

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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.
Psychiatrist - - - - - - - - -	DR. ELIZA P. BRISON, Halifax.
Superintendent Nursing Service - - -	MISS M. E. MACKENZIE, Reg. N., Halifax.

OFFICERS OF THE PROVINCIAL HEALTH OFFICERS' ASSOCIATION

President - - - -	DR. F. O'NEIL - - - - - -	Sydney.
1st Vice-President - -	DR. H. E. KELLEY - - - - - -	Middleton
2nd Vice-President - -	DR. W. R. DUNBAR - - - - -	Truro.
Secretary - - - -	DR. P. S. CAMPBELL - - - - -	Halifax.

COUNCIL

DR. C. G. MACKINNON - - - - - - - - -	Mahone Bay.
DR. B. C. ARCHIBALD - - - - - - - - -	Glace Bay.
DR. G. V. BURTON - - - - - - - - -	Yarmouth.

MEDICAL HEALTH OFFICERS FOR CITIES, TOWNS AND COUNTIES

ANNAPOLIS COUNTY

Hall, E. B., Bridgetown.
Braine, L. B. W., Annapolis Royal.
Kelley, H. E., Middleton (County & Town).

ANTIGONISH COUNTY

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

CAPE BRETON COUNTY

Densmore, F. T., Dominion.
Morrison, J. C. New Waterford.
Johnstone, L. W., Sydney Mines
McNeil, J. R., Glace Bay.
McLeod, J. K., Sydney.
O'Neil, F., Sydney (County), South Side.
Murray, R. L., North Sydney.
Townsend, H. J., Louisburg.
Gouthro, A. C., Little Bras d'Or Bridge, (Co. North Side.)

COLCHESTER COUNTY

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

CUMBERLAND COUNTY

Bliss, G. C. W., Amherst.
Drury, D., Amherst (County).
Gilroy, J. R., Oxford.
Hill, F. L., Parrsboro.
Eaton, R. B., River Hebert (Joggins).
Withrow, R. R., Springhill.

DIGBY COUNTY

McCleave, J. R., Digby.
Rice, F. E., Sandy Cove (Mcpy.).
Belliveau. P. E., Meteghan.Clare Mcpy.

GUYSBORO COUNTY

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

HALIFAX COUNTY

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

HANTS COUNTY

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.).
Rehfuss, 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.
Benvie, 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 September 1st., to October 1st., 1935.

The number of tissues sectioned is 194. In addition to this, 45 tissues were sectioned from 7 autopsys, making 239 in all.

Tumours, malignant	42
Tumours, simple	22
Tumours, suspicious	..
Other conditions	130
Tissues from 7 autopsys	45
	—239

Communicable Diseases Reported by the Medical Health Officers for the month of September, 1935.

County	Cer-Spi. Meningitis	Diphtheria	Infantile Paralysis	Influenza	Measles	Mumps	Paratyphoid	Pneumonia	Scarlet Fever	Typhoid Fever	Tbc. Pulmonary	V. D. G.	V. D. S.	Whooping Cough	Goitre	Conjunctivitis	German Measles	Erysipelas	TOTAL
Annapolis	..	..	..	..	6	..	..	..	..	..	..	..	..	21	..	..	..	..	27
Antigonish	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
Cape Breton	..	10	..	..	..	..	4	..	2	1	..	..	..	..	..	..	..	..	17
Colchester	..	..	..	..	26	..	..	..	4	..	..	..	..	7	..	..	..	..	37
Cumberland	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
Digby	..	..	..	6	..	1	..	2	..	5	2	1	2	..	..	..	..	..	19
Guysboro	..	..	..	4	..	..	..	..	..	..	1	1	..	..	..	..	4	..	10
Halifax City	..	3	1	..	1	..	3	..	24	..	6	..	..	3	..	..	..	..	41
Halifax	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
Hants	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
Inverness	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
Kings	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Lunenburg	..	..	1	..	..	..	..	..	3	1	..	..	..	..	..	..	..	..	5
Pictou	..	..	..	..	..	..	..	..	..	..	..	5	..	2	1	1	..	..	9
Queens	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
Richmond	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
Shelburne	..	..	..	..	..	25	..	..	..	..	..	..	..	..	..	..	..	..	25
Victoria	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
Yarmouth	1	..	..	4	..	10	..	..	..	..	..	..	..	..	..	..	..	..	15
TOTAL	1	13	2	14	35	36	7	2	33	7	9	7	2	33	1	1	4	..	207

Positive cases Tbc. reported by D. M. H. O's. 31.

RETURNS VITAL STATISTICS FOR AUGUST, 1935.

County	Births		Marriages	Deaths		Stillbirths
	M	F		M	F	
Annapolis	11	8	9	13	5	1
Antigonish	10	7	4	4	5	0
Cape Breton	109	113	67	50	39	1
Colchester	26	19	22	12	12	1
Cumberland	39	35	33	13	12	2
Digby	23	34	12	16	6	3
Guysboro	28	23	7	7	6	0
Halifax	91	85	58	41	46	2
Hants	31	17	17	8	8	1
Inverness	19	9	7	8	6	1
Kings	17	11	24	6	10	1
Lunenburg	20	24	20	14	10	1
Pictou	28	30	33	10	12	2
Queens	12	12	8	2	1	0
Richmond	4	11	6	8	6	1
Shelburne	7	12	6	5	6	1
Victoria	5	3	3	4	1	0
Yarmouth	18	17	22	10	7	
	498	470	358	231	198	18

Personal Interest Notes

Dr. G. A. Winfield, of Halifax, recently spent three weeks attending special clinics in hospitals of several American and Upper Canadian cities.

Dr. W. A. and Mrs. Hewat, of Lunenburg, spent a pleasant two weeks vacation trip in New York during September.

Dr. George Cox, of New Glasgow, and his daughters, Misses Edith and Elizabeth, have returned from a motor visit to Upper Canadian Cities. They spent some time in Ottawa, where they met several former New Glasgow residents and had a very interesting and enjoyable trip.

Dr. J. E. MacArthur, Noranda, Quebec, was in Antigonish in September visiting his sister, Mrs. Joseph McNeil. With his partner, Dr. MacArthur has charge of health work among the 1700 men employed at the Noranda mine. He is also silicosis expert for the Quebec Government in Northern Quebec. All miners in that part of the country must pass a physical examination before getting employment, and they must be re-examined at least once a year while at work.

Dr. A. L. Wilkie, of the Royal Victoria Hospital, Montreal, spent a brief visit with his parents, Mr. and Mrs. C. N. Wilkie, Antigonish, early in September.

Dr. Monte Haslam, Mrs. Haslam and small daughter, Heather, who spent the summer at their cottage, Herman's Island, have returned to their home in Concord, N. H.

Dr. F. L. Moore, native of Economy, graduate in Medicine of Dalhousie University, 1924, and former captain of the Dalhousie football team, and now enjoying a lucrative practice in Blountville, Tennessee, was a welcome visitor at the Truro Golf Club during the summer when he presented a valuable club as a prize for the caddy competition.

Dr. and Mrs. Joseph E. LeBlanc of West Pubnico attended the L'Assomption Convention at Moncton, N. B., and also visited Montreal, Quebec and Toronto.

Dr. H. S. Dickson, Dalhousie 1921, of Hilo, Hawaii, and his wife and young daughter, Mora, were in Sydney, early in September. Dr. Dickson was called home on account of the serious illness of his father, Captain E. M. Dickson, and made the trip from Honolulo to San Francisco by the S. S. "Mololo" in four and a half days and flew from there to New York in seventeen hours.

The marriage took place in Woodville United Church on September 12th of Miss Kathleen Eleanor Killam, daughter of Dr. and Mrs. H. E. Killam of Kinsman's Corner, Kings County, to Dr. L. E. Cogswell, of Berwick, only son of Mr. and Mrs. E. W. Cogswell. Miss Killam graduated from Dalhousie and obtained her M.A. degree from the University of Toronto. Dr. Cogswell

graduated from Dalhousie Medical College in 1932. After a motor trip through the Maritime provinces, Dr. and Mrs. Cogswell returned to Berwick where Dr. Cogswell is a successful practising physician.

Dr. Clarence Miller, Mayor of New Glasgow, was a visitor at Sydney for a week-end of September, the guest of Mr. and Mrs. R. J. Messenger.

On September 25th Miss Hope Hester Hatfield, daughter of Mr. and Mrs. G. C. Hatfield became the bride of Dr. W. E. Pollett, Dalhousie 1934, of New Germany, son of Mr. and Mrs. W. J. Pollett, of Sydney, at the home of her parents. Immediately after the reception, Dr. and Mrs. Pollett left on a motor trip, and will make their future home in New Germany where Dr. Pollett is practising.

Dr. L. F. Doiron of Little Brook, Digby County, was married to Miss Marie Theriault of Belliveau's Cove, at Milton, Mass., in September. Dr. Doiron graduated from Dalhousie Medical College in 1925 and practises at Little Brook.

A very pretty wedding was solemnized Saturday evening, October 12th, at St. James' Church, Armdale, Halifax, when Miss Frances Arline, daughter of Mrs. Joudrey and the late William L. Joudrey of Mahone Bay, and Dr. J. Howard Buntain, of Rustico, P.E.I., were united in marriage by Rev. A. LeDrew Gardner. Miss Joudrey graduated from the Children's Hospital, Halifax. Dr. Buntain attended the Prince of Wales College, Charlottetown, and graduated from Dalhousie Medical College in 1935. After the wedding supper Dr. and Mrs. Buntain left on a motor trip to Prince Edward Island and on their return will reside at Upper Stewiacke, Colchester County, where Dr. Buntain has recently acquired a practice.

OBITUARY

The death occurred, Friday, September 20th, at Auburn, Kings County, of Dr. Alfred Roscoe Andrews, at the age of eighty-five. Besides his wife, Myra, daughter of the late Rev. and Mrs. William Ryan, two brothers survive, G. W. and Arthur, both of Middleton.

Dr. Andrews was born in London, England, in the year 1849. He came to Canada when quite young and spent his boyhood days at Victoria Vale, N. S. He spent several years teaching school, after which he took a medical course at the Halifax Medical College graduating in 1879. After taking a special course for the eye, ear, nose and throat, Dr. Andrews practised for a number of years in Middleton. From Middleton he moved to Malden, Mass., where he spent thirty years in a large and successful practice. Two years ago he came back to Nova Scotia and with his wife resided at the home of the late Rev. William Ryan.

Dr. Andrews was a man of exemplary character, with high ideals and fine moral habits, beloved and highly esteemed by all those with whom he came in contact. His death will be mourned by a large circle of warm friends in Nova Scotia and the United States.