

The Children

Nova Scotia Medical Bulletin

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CASE NO. 1

Adolf Schickelgruber.

Male.

Aryan.

Paperhanger.

Age 52.

PAST HISTORY

Progressive paranoia and withdrawal from reality began to develop at an early age. Morbid hereditary stigmata identified as-illegitimate birth, chronic costive condition, hypotrophy of the genitals, were the causes.

Patient managed himself well until the onset of the first period of subjective-analysis, which developed during a term of imprisonment following an alcoholic debauch and hysterical exhibitionism in the Rathskeller, Munich, 1923. Psychosis characterized at this time by egotism, variable moods and eccentricities, aggravated by homosexual frustration. There were systematized delusions of persecution and megalomania until the patient finally (1933) posed as a reformer. Megalomaniac stage appeared about 1938 accompanied by criminal tendencies.

HISTORY OF PRESENT ILLNESS

All past symptoms have become markedly pronounced in the past few years. There is a new and extreme chromophobia, evinced in the patient's great sensitivity to Red. Other symptoms centre on claustrophobia with periods of delirium, when patient appeals for 'lebensraum'. There is a previously unobserved trait of the paranoid, known as russo-geophagia. Common instabilities such as fugue (wandering into cold eastern climes) and semitic hemophobia, are present.

SUMMARY OF POSITIVE FINDINGS

- I. Severe depression.
- II. Extreme loss of weight and emaciation.
- III. Spasm of right deltoid and flexors of forearm during which time patient mutters 'heil hitler'.
- IV. Ankle clonus when walking, accompanied by spasm of the quadriceps femoris.

DIAGNOSTIC IMPRESSION

Manic-depressive psychosis with marked paranoid tendencies.

TREATMENT

Shock treatment (Churchill) and bilateral cerebral lobectomy.

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*C.M.A.J. Dec. 1943. Tremble.

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Anorexia in Children*

N. BARRIE COWARD, M.D.

I HAVE taken as the topic of my paper the symptom anorexia. It is undoubtedly one of the most common complaints that either the paediatrician or the general practitioner is called upon to treat, yet in spite of its commonness, or perhaps because of it, there is still a marked tendency to treat anorexia as a disease rather than a symptom. In the home the parent looks upon anorexia as a disease, and the child, sooner or later, is brought to the doctor's office with this complaint, and with a more or less pre-formed desire for a tonic, which in their minds apparently is a cure-all. However, the restoring of the appetite is not always such a simple matter as that.

The creation of appetite is dependent on previous experience and conditioned stimuli, and is a pleasant subjective experience derived from memory impressions of sight, taste and smell of food. The maintenance of appetite is dependent on such things as normal gastric contraction, the presence of a normal flow of gastric juice, a normal state of the bowels, a balanced diet and a normal state of management in the home. Appetite should not be confused with hunger. Sensations of hunger and appetite while closely related psychologically, for both promote food intake, differ physiologically for each is initiated by distinct mechanisms. The physiologic mechanism for hunger is centered in the stomach, which is the seat of painful contractions when empty, and is not under the control of the higher brain centres. Hunger demands food—food that is liked if possible, but if not, whatever can be had. It initiates eating but is itself shortlived, disappearing after the first few mouthfuls of food as the stomach, now no longer empty, ceases to have painful contractions. From this point appetite and the pleasure of its satisfaction carry on, the end point of eating not being the satisfaction of hunger but the satisfaction of appetite and the feeling of enough.

Appetite is a very variable state, varying with different children of the same age and height, and varying from time to time in the same individual. Most children conform to an individual pattern of weight curve which is normally affected by alterations in appetite and other sensations which govern food intake. These variations are normal and appear to be levelled by the action of hunger, thirst, exercise, growth and storage capacity.

In the everyday practice of medicine, anorexia is met with in many ways and may be classified under four main headings:

- (1) Systemic disturbances.
- (2) Dietary disorders.
- (3) Hygienic causes.
- (4) Psychological causes.

(1) *Systemic disturbances*: This forms by far the largest group as anorexia accompanies practically all systemic diseases, whether of an acute or chronic nature. For example, organic diseases of the heart, lung, kidney and gastrointestinal tract produce decreased sensations for food, impaired utilization, and disordered elimination.

*Presented at The New Brunswick Medical Society, July 13, 1943.

—Functional disturbances of nutritional, metabolic or endocrine origin bring about a hyper or a hypo activity of digestive functions which lead to anorexia.

—Mechanical causes such as difficulty in sucking or swallowing or a painful stomatitis will lead to anorexia.

—In new born infants anorexia accompanies such conditions as pre-natal debility, atalectasis and so on.

—In other types of cases of this group, we may find the child beginning to refuse food when enlarged tonsils obstruct nasal breathing.

—The common post-nasal drip interferes with appetite.

—The child with a secondary anaemia lacks the tissue stimulus of the normal craving for food.

(2) *Dietary disorders*: In this group I include mainly such causes as unbalanced diets and irregular feeding. As is well known, the diets of many are far from being balanced, but I refer here mainly to those who take too much of one nutrient in their diet. In this respect it should be remembered that any nutrient given in over abundance tends to decrease the appetite for that particular food, as well as for associated foods.

—Diets which are deficient in vitamins A, B₁ and D decrease the efficiency of the digestive functions and, hence, the appetite.

Irregular feedings are a common practice in practically every home where anorexia exists. It is not unnatural that the mother should feel that as long as the child is not eating well the more she can get into him when she can, the better. Unfortunately, this does not work out as well as we would like. In fact, this habit of irregular feeding is a deterrent to the return of a normal healthy appetite. Irregular feedings even of a balanced diet will not induce optimum secretion, because of disordered rhythmic contractions of the stomach, which irregular feedings create. When one considers that the most commonly employed food for inter-meal hour feeding is milk, a food of high buffer value and slow emptying time from the stomach, it is not hard to see why the stomach is kept functioning continuously without the required period of rest so essential to normal gastric secretion and, in turn, good appetite.

Irregular feedings have no place in the daily management of the non-ill child. In certain chronic illnesses the use of small multiple feeds is indicated but usually, even here, the scheme of things does not include irregular feedings. One sees so very often the infant who is fed each time that he cries, and whose daily progress is one of increasing crying spells and irritability, quiet down and become very amenable with the employment of strict feeding times, and without much or any change, in his diet.

Under this heading we should also include anorexia brought about by the use of food containing a food factor for which the patient has an intolerance. These intolerances to any food factor are usually seen in infancy although they are by no means uncommon in later childhood.

Overfeeding in infancy is also another common error that accounts for many cases.

(3) *Hygienic causes*: This group forms more of a contributory rather than a primary cause as are the systemic or behaviour group in the production of anorexia. It is a cause that we often fail to enquire into as carefully as we should when dealing with these children. Hygienic causes are to be found

in the child who lacks fresh air, exercise, sunlight, sleep, or who is constipated. This latter cause perhaps belongs more to the dietary cause but I have included it here because in the last group I had in mind diet per se and not its effect on digestion, bowel, etc. Constipation is a wide spread condition, and the child who is habitually constipated, is deprived of normal intestinal function with its consequent loss of appetite. The pernicious use of daily laxatives does not restore appetite as it does not get at the seat of the trouble from which the child is suffering—in fact it often makes the matter daily worse.

Even in this day and age it is surprising how little fresh air and sunshine some children get. They live and sleep in drafty houses which is considered as being enough fresh air, whereas, no doubt in many others it is because mother is too tied down with household duties to bother getting the children outdoors. In still others it is because there is no place to allow the child out in safety.

The older child usually, however, manages to get out and our problem with him is mainly one of exercise. Children being normally very active, often overdo their exercise and produce a state of fatigue. The child who suffers from a state of fatigue lacks the zest for taking the necessary amount of food. In this way it is not long before a vicious circle is started, exercise leading to fatigue, and then to anorexia. The smaller intake of food provides still less energy and in turn leads on to a greater state of fatigue and so on. The stimulation of the metabolic processes by outdoor activities must be balanced by adequate rest.

Again, one is disturbed by the careless hour of putting children to bed. This is particularly so with children of 6-7 years and on, who stay up until 9 p.m., 10 p.m., and even 11 p.m. listening to radio programmes, or otherwise stalling around. Now no growing child can do without adequate sleep. The lack of sleep will produce both mental and physical fatigue which certainly leads on to anorexia, or aggravates an already existing anorexia from any other cause.

(4) *Behaviour or psychological causes*: There is no doubt that this is our second largest cause of anorexia. As a group it is more often seen in the homes where care, hygiene, diet and control are adequate, and where one would expect that under such conditions anorexia would be non-existent. Nevertheless, it forms a large group of cases affecting all children but mainly the 18 months to 4 year old group.

In the majority of cases the behaviour develops apart from any organic illness, while in others it is superimposed and added to the anorexia produced by a preceding illness. The time, care and attention bestowed on the child during the stage of an acute illness is not to be stopped merely because he is not ill, he thinks. In order to ensure this, he therefore adds to his legitimate cause the additional cause of behaviour. Sometimes the former is lost sight of or has resolved itself, but the latter cause keeps the complaint ever active. Where behaviour is the cause, the meals usually become a scene of coaxing, threatening, promising, bribing and the like to the digestive detriment of both parent and child.

This self-imposed hunger strike of children has its origin in the management of the child. The parents are as a rule over solicitous and apprehensive. They seek to make the child eat what they feel the child should eat, or what some friend's child eats, and then are deeply disturbed if their child does not

take the required amount. In other cases the management of the daily routine brings adult and child into constant or too frequent contact, and, therefore, constant clashes result as the child seeks to express his own innate desires and imaginations. These and other similar states create an atmosphere which is tense and disturbing to the child. He soon recognizes the weakness of the whole set-up and the strength and importance of his own position, and strikes back at a point where he realizes he can create the greatest effect—in other words where his eating is concerned. The desire to create a disturbance, to create a storm of which he himself is the centre, is a normal phase of child psychological development, and what better avenue of attack is there than at meal hours, where the child knows that he is “cock of the walk,” since eating is one thing that his parents cannot do for him? In dealing with any case of anorexia, and particularly those where no legitimate reason can be found, it is well to remember that a child develops normally in two environments, a physical and a mental. It is imperative that both of these should be searched for causes if one desires a full and satisfactory recovery.

Confronted then with a case of anorexia, what should we do? First of all a careful clinical history leading up to the present complaint will often reveal many points of help in solving the cause of the anorexia. Such points as the child's general health, ability to play and to cope with exercise, feeding habits, prior to, as well as during, the period of complaint, the amount of time spent outdoors, hours of sleep, and the daily round of management at home are all important and fact revealing. I am quite sure, that if a little more time were taken in obtaining a full history, we would not be quite so quick to simply write a prescription for a tonic, as if that were all that it was necessary to do. In many cases, for example, such as those who fail to get outdoors enough, or those whose sleeping habits leave much to be desired, the prescription should be in terms of fresh air, sunlight and sleep rather than in medicine. Fatigue from over-exercise or other causes can be regulated far better by increased rest and the use of Glucose between meals, than by mere tonics alone. Even in a healthy child with a good appetite, activity must be balanced by rest if we are to prevent any lowering of the food intake.

Following the history, a careful examination should also be made. This is primarily to determine if there are any organic causes to account for the anorexia. If there are no organic causes, and the clinical history is also essentially negative, then we should consider the case as probably having a psychogenic cause and investigate it carefully as such. If there are organic causes present, these must be corrected first, before permanent results can be obtained. In cases, for example, where diseased tonsils and adenoids are causing the trouble, a simple tonic mixture may perhaps help for a very short time, but your patient will soon be back with the complaint of “no improvement,” and this no improvement will continue until the tonsils and adenoids are removed. However following the removal of the tonsils and adenoids a tonic mixture will no doubt then be of help to your patient. Similarly, when there is a secondary anaemia of any import present, the cause of the anaemia must be sought and treated before appetite will permanently return. The anaemia itself should always be treated with adequate doses of iron and not with the amounts commonly employed in tonic mixtures, particularly the patent tonic mixtures.

The acute systemic disturbances form a large group of these cases. In

many of them nothing is needed to treat the existing anorexia, for as soon as the illness subsides, gastric contractions return and with it, the appetite. However, if during the illness the diet is forced, or your patient overfed, then the appetite will be slow in returning. Speaking generally, this group offers us little worry, their only need, usually, being a little iron to offset any secondary anaemia so common in nearly all febrile disorders of infancy and childhood.

Patients with a chronic illness do present a much more difficult problem. Here it is very necessary to keep the appetite stimulated owing to the chronic nature of the illness. The patient's health is unquestionably affected by the chronic infection, and if the food intake is also materially lower favouring the course of the illness instead of the course of the patient toward the return of good health. In these cases one should see that the diet is of a high caloric type, and well balanced with all the needed requirements. As long as the patient is taking only small amounts of food, these small amounts must be distributed to include a well balanced diet. Additional vitamins, particularly vitamins B₁ and C, should always be given to make up any loss between the diet eaten and the child's fullest needs. Iron in the presence of any infection, acute or chronic, is usually of little value, but its use is not contraindicated. In addition to the above, careful regulation of the other hygienic factors helps in the return and re-establishment of the appetite.

In the group of cases where the anorexia is dietary in origin, it is diet alone that will bring about satisfactory results, medicine per se being of secondary value. Amongst the infants, I find that there is often very little attempt made by the doctor to reason out the cause. On many occasions I have had infants brought to me for anorexia, and other feeding disturbances, who have been on three or four or more different feedings but at the same time all belonging to the same class of feeding. That is, the baby, who we shall say has a fat intolerance, is fed on different foods and different dilutions but always on a milk food containing a full amount of fat. Certainly, if the baby is fat intolerant, anorexia will continue to exist as long as fat is used in the diet but will quickly respond once the fat is taken out.

Anorexia following overfeeding usually requires very careful management of the diet for a long time before appetite returns and is properly established. I believe that, at present, there is a marked swing of the pendulum toward this end. Overfeeding, unfortunately, does not show up at once but usually two to four months later, and much damage can be done before the case is brought to the attention of the doctor. There is nothing gained in starting the infant on new foods too early in life, and it is a far better mode of management to prevent anorexia from overfeeding than to treat it.

Regularity of feeding is the main stay of management for dietary, and indeed all other causes of anorexia, and cannot be stressed too much. All cases should be fed only at their regular meal hours, with nothing beyond fruit or water between meals. It is immaterial, at the moment, how little the child takes at each meal. We are concerned with the greater underlying problem of restoring appetite, by creating normal gastric contractions and a normal flow of gastric juice, which is impossible to attain in the face of irregular feedings. Candy and sweets of all kinds are notorious killers of appetite and have no place in the dietary regime of the child with anorexia. Ice cream should be used as a dessert at the regular meal hour, and not between meals.

These latter two points may ruin, or seriously delay, an otherwise good routine unless stressed to the parent, who thinks nothing of the matter of giving "treats" to the child between meals. For the child with a good sound appetite, the occasional treat of ice cream does no harm, but the child with anorexia must be denied all such until he, too, is a child with a good sound appetite.

In the management of anorexia of psychological cause, we usually have a bigger problem because it is the parent who needs the handling and seldom the child. In short, once the child discerns that his misbehaviour causes no concern or is not of any interest to the parent, he himself will lose interest and the problem will clear itself. Yet this simple fact is not always easy to get across to parents. They are usually afraid to allow the child to miss a few meals, or afraid that he will not gain in weight, or that something much worse will happen to him because of it. These fears must first of all be dispelled from the minds of the parents or no success will be attained. The relationship of the problem and normal child behaviour to the parent's reaction and its influence on the continuation of it, must be explained to the parent. Once the parents perceive how it is usually they, who are the cause and the continuing stimulus of the problem, more than half the battle is won in getting rid of these trying sessions. It is very necessary, however, for the parent to really believe that what he or she is doing is correct, and to carry out your instructions with a finality of purpose. Play acting, that is, trying outwardly to be calm while the mind is still in a state of turmoil, will not achieve success, and is usually worse than doing nothing about the problem.

Particular suggestions may vary with different children depending upon their own peculiar problem, and for best results, no doubt, each case should be considered on its own merits. However, speaking generally the following principles of management may be employed.

(1) The child should be brought in from outside play at least twenty minutes before meal time. By this means you provide a chance for the child to recover from any immediate fatigue acquired from active playing. It also gives the child a chance to adjust himself from his more interesting and exciting play to what should be, but often is not, the joy of eating. Lastly it gives the child a chance to quiet down emotionally. Children's squabbles are seldom of serious importance but they are common occurrences, and in many children any emotional disturbance is sufficient to upset the desire for food.

(2) Have the child eat in the kitchen, or away from the family table, by himself. By himself and with no one to disturb him, his misbehavings are wasted on thin air, whereas at the family table everyone pounces on him, or pleads with him to take his food, or at least a mouthful of it for each member of the family. In many instances it is at the family table that the child has learned to eat badly, mimicking his elders who openly show their dislike for this and that food.

(3) No reference whatsoever is made when the food is placed before the child.

(4) Allow the child to eat what he will without any assistance and without any comments on how little he eats. Parents tend to centre attention too much on how little is eaten, and seldom give credit when the child eats well. It is much more practical to speak about how much he eats than how little. It is the parent's business to provide the food but it is the child's business to eat it. Therefore the parents should decide what the child shall eat, and the child decide how much it will eat. Neither parent, nor any one else, has the

right to say just exactly how much a child should eat. In infancy, we abide by certain rules and amounts, and to materially over or under step them may have repercussions on the infant's health. The child, however, that is from two years and on, should be given the right to determine his own food intake. This same general principle is beautifully expressed in the frequently quoted words of Lippman, "With all our weighing and measuring, and all our rules and regulations as to when, where, what and how much to feed children, we have succeeded in doing just one thing—we have taken their appetites away."

(5) Place small amounts of food on the plate when serving the child. The mere fact of being able to eat all the food on the plate is itself a healthful stimulus to the return of the appetite, whereas a large serving makes the child at once feel, "Oh, I cannot eat all that,"—a deterrent to the return of the appetite. Small helpings stimulate requests for second helpings, and provide an opportunity for creating fun and amusement and centring interest on how much and how well he can eat instead of the previous how little.

(6) After a reasonable length of time remove the dishes without any comment. If the main course has not been eaten, it is better not to allow the dessert course, which most children like, on the ground that if there is no room for meat and potatoes, there is no room for dessert or milk. The child must learn that his refusal of food affects no one but himself. He only is the sufferer.

(7) *Feed regularly.* As mentioned before this rule applies to all cases of anorexia. However in these cases it is very important to observe it, even though little or no food is taken at the regular meal hour. The loss of a few meals does no harm to the child, and in most cases he eats more at the following meal even though the problem is still existent. It is much better to temporarily starve the child physically, than run the risk of impairing his emotional state permanently.

How far should we go in our management of a case of anorexia? Certainly our responsibility should not cease with the examination and the writing of a tonic, but rather when we can call our patient a good eater and normal health is restored. Clara Davis of the Children's Memorial Hospital in Chicago, considers a child a good eater only "when he gets normally hungry by meal time, eats with keen appetite and enjoys his food, and ends his meals with the feeling of expansive good nature and well being that comes from enough." The level of this "enough" is definitely an individual pattern, but as long as good health is maintained, as evidenced by normal color, the maintenance of normal activity without fatigue, good posture, normal tissue and muscle tone and normal sleep and hygiene, then it makes no difference what that level is.

The evidence for the trustworthiness of appetite as a guide in eating under simple and natural conditions is apparently valid. In our modern world, however, we are ever changing from the simple and natural to the unnatural, particularly as far as the obtaining of foods is concerned. Let us, therefore, attempt to keep our children within their own simple and natural bounds, where they will develop to their optimal ability, rather than push them beyond their strength, either mental or physical, along the road of our own choosing. Let us guide and advise, and not merely medicate them along the road to good health, remembering that one of its basic requirements is a good appetite, or as Shakespeare so aptly puts it,

"Let good digestion wait on appetite, and health on both."

The Handling of Difficult Labor*

H. J. STANDER, M.D.

(From the Department of Obstetrics and Gynecology, Cornell University Medical College and the New York Hospital)

THE main causes of difficult labor or dystocia are: (1) inadequate forces of labor or a subnormal vis a tergo; (2) mechanical obstruction in the birth canal to the descent of the fetus; (3) abnormal presentation or development of the child; and (4) accidental complications, such as rupture of the uterus, hemorrhage or toxemia.

In this discussion I shall confine my remarks mainly to the first two of these groups, namely, insufficiency in the contractions of the uterine and abdominal muscles and abnormalities of the birth canal, particularly those of the bony pelvis.

Uterine inertia is a serious complication of labor and should be so regarded at all times and in any one of the three stages of labor. It may be due to faulty uterine muscular development, abnormalities, such as myoma, of the uterine wall interfering with the contractions, or improper innervation of the uterus. When the uterine inertia is due to congenital or developmental abnormalities of the uterine musculature, we often see other evidence of imperfect development of the individual, although this is by no means always true. Uterine inertia may occur in an apparently strong, healthy and even athletic woman. It must also be borne in mind that uterine insufficiency may be on an endocrine basis.

In the majority of cases, when the problem confronts us at the time of labor, it is difficult, if not impossible, to determine the cause of the inertia. Furthermore, our attention at that time is directed mainly to its treatment. I, therefore, wish to discuss first the handling of a patient with uterine inertia, in whom there is no apparent cause for the muscular insufficiency, such as tumors or bony obstruction to the descent of the child.

Often the inertia is apparent at the very initiation of labor or very early in its course. From the work of Murphy and others on the character of uterine contractions as shown by the recorded tracings with the tocograph, it is evident that the pattern of contractions is set fairly early in labor. Frey of Zurich for many years has emphasized the number of contractions as of far more importance than the duration of labor. I wish to state that I am strongly opposed to the utilization of the duration or length of labor as an indication for operative interference. It is only in the very occasional patient with true uterine inertia where active treatment is demanded. However, the handling of uterine inertia is of paramount importance.

It is well known that periods of rest, induced by hypnotics, castor oil and hot soapsuds enemata are often of great help.

In a recent study conducted in our clinic, the administration of quinine on labor by Marchetti, Kuder and Fitch, it was found that quinine did not actually shorten the duration of labor. These authors studied 500 patients (290 primiparae and 210 multiparae) to whom quinine was given, as well as a control series of 500 cases (269 primiparae and 231 multiparae). From their

*Read at Dalhousie Refresher Course, Halifax, N. S., October 13, 1943.

observations they concluded that the number of doses or the amount of quinine administered has no relationship to the duration of labor and that, in general, the use of quinine in obstetrics may prove to be of little value. Although they noted no appreciable adverse effect of quinine medication on fetal mortality, it is our present practice to limit the dosage of this drug to 5 grains (0.3 gms.). As a result of the above noted study we are resorting less and less to quinine medication in both the induction of labor and in the handling of prolonged labor.

We have learned to place great emphasis upon the administration of intravenous glucose to all patients in labor over twenty-four hours. It is known that in dogs the glycogen stores in the liver are markedly depleted during normal gestation and I believe it is safe to assume a somewhat similar condition holds true for the woman. Labor, with its attendant muscular work, undoubtedly produces a further depletion of the patient's carbohydrate supplies. Intravenous glucose, in the form of 5 or 10 per cent given in 500 cubic centimeter amounts, offsets, in part at least, this depletion while also acting as a diuretic. Not only do we use this form of therapy in all cases of prolonged labor, but also when such complications as rapidity and irregularity of the fetal heart become evident, and then usually in combination with some form of sedation, such as morphine, pentobarbital or rectal ether.

There are different teachings with regard to the use of pituitary preparations in these patients with uterine inertia. My own belief is that pituitrin should seldom, if ever, be used in this class of patient during the first stage of labor. With regard to ergot and its preparations one may make an even more categorical statement, as the uterus is liable to remain firmly contracted and ultimately loses its vis a tergo. Very occasionally do we use nasal pituitrin in these cases and then only with the utmost caution.

There is scarcely an obstetrical complication which requires greater judgment than uterine inertia, when the advisability of operative intervention must be considered. Marked maternal exhaustion, intrapartum infection and fetal distress are the only indications for such intervention in our clinic. If there is no cephalopelvic disproportion, the cervical canal taken up, the external os dilated to seven or more centimeters and one of these three indications present, Dührssen's incision of the cervix followed by version or forceps delivery often give excellent results. We do employ this method on one or other of these indications and with the prerequisites as stated above, but we never employ it simply to shorten labor.

The dangers of manual dilatation of the cervix must be stressed. The practice of manually dilating the cervix from four, five, six and even seven centimeters to permit the delivery of the child cannot be reprehended too severely, as this procedure so often leads to deep cervical tears extending into the lower uterine segment. Some of the worst cases admitted to our hospital have been those where such treatment had been carried out prior to admission. There is the very occasional patient in whom the cervix is eight centimeters dilated with its edges thin, the head of the child well down, where one may gently and cautiously push the cervix back and over the presenting part, but these are indeed rare.

There is also a small group of patients in whom all efforts to stimulate uterine contractions have failed and the cervical canal has not become obliterated. In these the use of a bag should be considered. The bag, of course,

acts as an irritant and often leads to satisfactory dilatation of the cervix and delivery.

Low cervical or extra peritoneal cesarean section is justifiable only on the most urgent indication and in the absence of infection. In our hospital this is indeed rare in the type of case under discussion. I have more extended remarks regarding cesarean section when we consider cephalopelvic disproportion.

Should the uterine inertia cause prolongation of the second stage of labor, the problem is more readily solved, as forceps delivery is the procedure of choice in all cases except where disproportion between the child and the pelvis produces further dystocia.

During the past year we have employed sulfadiazine therapy prophylactically in patients with prolonged labor. This treatment was decided upon after Douglas and Stander, in a study of infantile mortality in prolonged labor, found a fetal bacteremia in 85 stillborn infants, most of whom were born following prolonged labor with intrapartum infection. We noted that although the incidence of prolonged labor (over 30 hours) had remained unchanged during the past ten years, the infantile mortality following prolonged labor decreased steadily during that period and that this decrease was due to a decreased rate following operative delivery.

In this study we found an increase in maternal and fetal mortality, puerperal infection, morbidity and operations in prolonged labor as compared with the incidences in the whole clinic population. The great increase in both puerperal morbidity and infantile mortality in prolonged labor is accounted for mainly by the increased incidences in the operative delivery group. When this group of operative deliveries is studied further, it is found that forceps delivery is performed about two and one-half times more frequently in prolonged labor than in the hospital as a whole and this may also be said for breech extraction.

As stated above we have experienced a marked decrease in infantile mortality in our clinic during the past ten years and found that this decrease is accounted for wholly by the decrease in fetal deaths in operative deliveries. Of note is the fact that the incidence of operative delivery following labor of 30 to 36 hours had decreased during that period. As a result of the evidence elicited from this study, there can be no doubt that operative procedures following prolonged labor give far worse results than those in spontaneous delivery.

During the past six months we have employed sulfadiazine in 36 cases of prolonged labor and 10 additional complicated cases. It must be stressed that such therapy should be employed relatively early in prolonged labor, as it is our conviction that if used after frank intrapartum infection is present it has much less therapeutic effect.

From Table I it will be noted that the duration of prolonged labor in these patients varied from thirty to over one hundred hours, while in 50 per cent of the cases it ranged between 36 and 60 hours. In the next table, Table II, is shown the dosage of sulfadiazine as well as the blood levels of the drug in both mother and child. The average dosage given was 5.4 grams during the labor. Our method of treatment is to administer an initial 2 grams by mouth to be followed by one gram every four hours. Fluids are forced to the point where the urinary output is at least 1000 cubic centimeters a day. The urine

is examined daily for crystals and the blood level of the drug determined daily. Bicarbonate of soda is given in amounts equal to at least twice that of the sulfadiazine.

The results in the 36 cases of prolonged labor are recorded in Table III. It will be seen that we had one maternal death and three fetal deaths. From a detailed study of this small series of cases it has become apparent that when the sulfadiazine therapy is started immediately after the patient had been in labor twenty-four hours or after it had become apparent that the labor will be unduly prolonged because of uterine inertia, the results are better than when the therapy is started late in prolonged labor or after frank intrapartum infection is present.

In Table IV are recorded the treatment and end results in seven difficult cases of prolonged labor. It will be seen that in the first case sulfadiazine was not used and the patient died on the eleventh postoperative day from generalized peritonitis. The other six patients lived. The last patient had a labor of 112 hours and delivered spontaneously, the child being alive and well.

In Table V we see the treatment, type of delivery and results to mother and baby in ten complicated cases. All patients, except the case of infected abortion, delivered spontaneously and had living and well babies with the exception of the mother with status epilepticus whose child died from cerebral hemorrhage. The results in this group of patients are very encouraging and should, I believe, be ascribed in part to the sulfadiazine therapy.

Before discussing the borderline contractions of the pelvis, attention should be directed to so-called cervical dystocia. In this condition cervical dilatation does not proceed in a normal manner, although the uterine contractions are frequent and of excellent character and duration. Furthermore, the cervix on inspection and examination may reveal no abnormalities such as cicatricial stenosis, congenital malformation, hypertrophic elongation and inflammatory lesions. The exact cause of cervical dystocia is not known. It has been suggested that it may be on a basis of abnormal nerve supply, but this has not been proven.

Spinal anesthesia has been recommended for treatment of this condition. Recently Bunim recommended local anesthesia by means of pudendal nerve block in the handling of cervical dystocia occurring late in the first stage of labor. He reports favorable results with this method.

It is my belief that so-called cervical dystocia, excluding all pathological conditions of the cervix, is very often due to uterine inertia. A small group may be due to actual rigidity of the cervix and in these sedation or anesthesia may be helpful. The lack of dilatation may, of course, be due to an inadequate apposition of the presenting part against the cervix. On rare occasions the introduction of a bag is indicated. If the condition occurs after 7 or 8 centimeters of dilatation has been reached, Dührssens incisions can be employed.

Lastly, we should consider the role played by the contracted pelvis or cephalopelvic disproportion in the production of difficult labor. It is the borderline type of contracted or abnormal pelvis which leads to the greatest number of errors in judgment. I should like to state at the outset that we have virtually discarded the test of labor in patients with contracted pelvis. By test of labor we mean sufficient labor to produce full dilatation of the cervix and a second stage of one to two hours with the membranes ruptured. It is our belief that a decision as to the type of delivery should be made fairly

early in labor, in other words, after a "trial of labor," by which we mean four to six hours of active labor, contractions occurring every five to ten minutes and lasting 40 to 60 seconds. A trial labor is indicated in those patients, with borderline contractions of the pelvic inlet, in whom one cannot estimate disproportion before the onset of labor due to the fact that the presenting part is not well down and over the superior strait of the pelvis. Thus we employ trial labor only as a means of facilitating the procedure of estimating cephalopelvic disproportion and not to produce moulding of the child's head.

The majority of patients with borderline contracted pelvises will deliver spontaneously, although it is not always a simple matter to predict the outcome in any given case. These patients should be examined and followed very carefully during the antenatal period. We see such patients in a special ante partum clinic, devoted to this purpose and called the "dystocia clinic." Often a decision as to the type of delivery can be made in this clinic and before the onset of labor. When the patient is admitted in labor, a most careful examination must be performed. The earlier in labor a final decision can be made the better for both mother and child.

It is in this group of patients where X-ray pelvimetry has been of real benefit. The findings from such X-ray studies should be combined with the clinical measurements and findings. Let me say that I believe X-ray pelvimetry has been abused to an alarming extent. It is a simple matter to-day for the doctor when confronted with a slight contraction of the pelvis to send the patient to an X-ray laboratory and obtain a report, from the radiologist, that cesarean section is indicated. We have used the X-rays extensively during the past ten years, as shown by the publications of Steele, Wing, McLane and Javert of our clinic. However, it is my firm belief at present that X-ray pelvimetry should not be used independently of the clinical findings, unless, of course, the pelvic contraction is so marked that cesarean section is the procedure of choice even without the X-ray findings.

In the X-ray study of the pelvis we employ the stereoscopic antero-posterior films of the pelvis according to the plan of Caldwell and Moloy and the lateral technique of Thoms. With this technique we obtain information as to the shape of the pelvis and the fetal head and the sagittal diameters of the pelvis.

It must be repeated that we do not utilize the information gained from X-ray pelvimetry to the exclusion of clinical findings and observation. I know of no case in which cesarean section was performed in a patient, with a borderline pelvic contraction, solely on the X-ray indication.

There is a very distinct and definite place for the use of forceps in contracted pelvises. First, it must be emphasized that the employment of high forceps is absolutely contraindicated. This is, of course, obvious when one realizes that failure of engagement after an hour or more of efficient second-stage contractions must be due to definite cephalopelvic disproportion.

On the other hand, mid and low forceps have a place in the handling of borderline contractions of the pelvis. In most cases the head engages in a transverse position with a slight amount of asynclitism, the posterior parietal bone presenting more prominently. The pains of labor drive the anterior parietal bone backwards and downwards, lateral flexion occurring and the fetal head occupying more of the fore pelvis or the more ample posterior pelvis, depending on such factors as the size and shape of the pelvis and fetal head and

the direction of the vis a tergo. As the head descends to the level of the ischial spines, anterior rotation starts. The head now moves forward and downward into the outlet of the pelvis, and with some lateral flexion.

It is well to bear in mind this mechanism of labor in operative delivery by forceps. In various abnormal pelves the head may not follow the usual mechanism of labor. In the anthropoid or transversely contracted inlet, the head usually engages in the anterior or posterior oblique positions. In such cases the head descends in this position until low in the pelvis before it starts anterior rotation. This may also hold true for a pelvis with side wall convergence or a narrow interspinous diameter with a large posterior sagittal diameter. In these instances one should know the shape of the pelvic canal in order to determine at what level manual or forceps rotation of the head (in a posterior or transverse position) can be most advantageously accomplished.

In the flat and android pelves the head usually descends in a transverse position. Transverse arrest in android-anthropoid types usually occurs at a higher level in the pelvis than in simple flat pelves because the transverse restriction interferes at about the level of the spines. With transverse arrest in this form, anterior rotation by the manual method should be accomplished before attempting forceps extraction. These examples are cited to indicate that forceps delivery for transverse arrest or posterior position should be done with a full knowledge of the shape of the inlet, the capacity of the pelvis and the particular mechanism of labor involved.

We now come to the place of cesarean section in the handling of difficult labor. Classical cesarean section has no place in the treatment of patients actually in labor and should be limited, as an elective procedure, to patients who are not in labor. On the other hand, the low cervical and extraperitoneal types of cesarean section have a definite place in the handling of difficult labor. However, it must be emphasized that although these operations are relatively safe during the first ten to fifteen hours of labor, they are attended by an undue and progressively increasing risk to the mother as labor advances beyond this period. In the treatment of patients with borderline pelves, or other complications which may result in dystocia, it is our aim to evaluate conditions before or early in labor in order to determine whether the patient should be allowed to deliver spontaneously or be subjected to a cesarean section.

This operation is undoubtedly at times of the greatest value in that it may save the life of both mother and child. Upon proper indication and performed at the right time, it becomes one of the most valuable procedures among the obstetrician's armamentarium; but when it is performed in the face of contraindications and without justification, it becomes one of the greatest abuses seen in all obstetrics.

In 2108 patients with contracted pelves delivered in our clinic during the eight year period 1932-1940, the uncorrected maternal mortality was 0.19 per cent, or less than 2 per 1000 patients, compared with an uncorrected maternal mortality in all patients with normal pelvis, during the same period, of 0.1 per cent. The accompanying uncorrected fetal mortality was 5.9 per cent, and that due to contracted pelvis 2.7 per cent in the 2108 patients with contracted pelvis. Our gross infantile mortality for the past 11 years is 3.713

per cent and the uncorrected maternal mortality in 42,854 obstetrical patients is 0.175 per cent or 1.75 per 1000 patients.

In a recent report, by R. Gordon Douglas of our staff, on puerperal mortality in New York City for the period 1937-1940, 58 deaths associated with cesarean section are critically analyzed. The data for this analysis emerged from the findings of the Maternal Welfare Committee of the New York County Medical Society, which has studied all puerperal deaths occurring, since 1937, in the Borough of Manhattan. During this period the incidence of cesarean section for the city as a whole was 2.4 per cent. The maternal mortality in patients delivered by cesarean section was 2.7 per cent. Even more striking is the finding that of all puerperal deaths 21.3 per cent were associated with cesarean section.

Among the indications for these 58 fatal cesarean section cases, dystocia after trial labor accounted for 13 and contracted pelvis for 10 cases. It is noteworthy that a diagnosis of contracted pelvis was based on the X-ray findings in 50 per cent of the latter group. It was also noted that "previous cesarean section" was the indication in 8 cases, or about 14 per cent of the total number. It is my belief that previous cesarean section in itself should never be an indication for a subsequent section, in other words, I do not subscribe to the dictum "once a cesarean section, always a cesarean section."

From the findings of the above Committee, it became evident that anesthesia was directly responsible for three of the fifty-eight deaths. Furthermore, Douglas concludes that it played an important role in eight additional cases. From his analysis of the type of anesthesia employed, he is convinced that if local anesthesia had been more extensively used, there would have been a marked reduction in the maternal mortality associated with cesarean section.

Among the causes of death in these 58 cases, infection accounts for almost half, while hemorrhage and shock are responsible for almost one-fifth of the deaths. The largest number of deaths occurred in the low flap type of operation, and particularly in the group of patients who were in labor at the time of operation. This finding must not be taken to mean that the low flap operation per se is at fault, as we do not know the contraindications in each instance. It is merely further substantiation of the statement made earlier in this paper, to the effect that while the cesarean operation is one of the greatest boons to mankind in the field of obstetrics, it must be performed on a proper and adequate indication, at the most appropriate time and without contraindications which are accompanied with undue risk to the mother. That there were errors in the management of the majority (46) of the 58 cases is seen on review of the cases. It would appear that delay in decision as to type of delivery, too extensive use of general anesthesia, lack of adequate transfusion and errors in technique account for most of the deaths. For the past eight years it has been a rigid requirement in the New York Lying-In Hospital that all patients subjected to cesarean section must be grouped and matched and available blood or a donor procured before the operation is undertaken.

In conclusion, it is apparent from the above remarks, that in the handling of difficult labor each patient must be studied individually, at the onset and early in labor, after having received adequate antenatal care, involving accurate pelvic mensuration and treatment of such complications of pregnancy as anemia, heart disease, hemorrhage, tuberculosis, etc. At the time of parturi-

tion it should be the aim of the doctor to arrive at a final decision as to the type of delivery, best suited for the patient, as early as possible in labor. Conservatism in the treatment of uterine inertia gives better results than radical measures, and this may also be said for the majority of cases of contracted pelvis. On the other hand, forceps as well as cesarean section have a definite but restricted place in the handling of difficult labor. Contraindications to both operative procedures must be constantly borne in mind. Intrapartum infection, with possible intrauterine death of the child and with grave danger to the life of the mother, may be prevented or greatly ameliorated by the avoidance of unnecessary vaginal examinations and operative interference, as well as by the judicious use of chemotherapy before the appearance of signs of frank infection.

TABLE I
EXTENT OF PROLONGED LABOR

Number Cases	Hours	Percentage
6	30- 36	16.7
10	37- 48	27.8
8	49- 60	22.2
10	61-100	27.8
2	100+	5.6

TABLE II
SULFADIAZINE TREATMENT

	Total Dosage (grams)	Maternal Blood Level (mg. %)	Fetal Blood Level (mg. %)
Average.....	5.4	7.9	7.1
Lowest.....	1.	trace	trace
Highest.....	15.	17.6	17.1

In 12 instances the difference between maternal and fetal blood levels was less than 0.5 mg. per cent.

TABLE III

END RESULTS IN PROLONGED LABOR TREATED WITH SULFADIAZINE
36 Cases

	Number Cases	Percentage
Maternal mortality.....	1	2.8
Maternal morbidity.....	9	25.0
Puerperal infection.....	6	16.7
Fetal mortality.....	3	8.3
Fetal complication.....	2	5.6
Intrapartum infection.....	16	44.4
Intrapartum infection, mild.....	11	30.6
Intrapartum infection, severe.....	5	13.9

TABLE IV

TREATMENT IN SEVEN COMPLICATED CASES OF PROLONGED LABOR

Hours Labor	Sulfadiazine		Intrapartum Infection	Premature Rupture Membranes	Delivery	Result		
	Dosage	Maternal Blood Level				Fetal Blood Level	Mother	Infant
32	0	0	0	Mild	-	Version extraction followed by hysterectomy for ruptured uterus	Died 11th day. Autopsy: generalized peritonitis non-hemolytic strep. alpha	Deadborn. knot in cord. Heart blood: gram and spore.
85	15	10.5	6.5	Mild	-	Forceps	Afebrile. Uterine culture: +anerobic nonhemolytic strep.	Deadborn. Heart blood: +anerobic nonhemolytic strep.
41	5	?	?	Mild	-	Latzko	16-day fever. Uterine infection: anerobic nonhemolytic streptococcus	Deadborn. No autopsy. Clinically: infection + asphyxia.
37	1	?	?	Severe	+	Latzko	5-day fever	Living and well
67	8+	13	10.6	None	-	Spontaneous	Afebrile	Developed broncho-pneumonia; recovered
56	3	?	?	Mild	+	Spontaneous	Afebrile	Developed bleeding tendency; recovered
112	3	2.6	2.6	None	-	Spontaneous	Afebrile	Living and well

TABLE V

TREATMENT IN TEN COMPLICATED CASES

Indication	Hours Labor	Sulfadiazine			Intrapartum Infection	Premature Rupture Membranes	Delivery	Result	
		Dosage	Maternal Blood Level	Fetal Blood Level				Mother	Infant
Desultory labor	27	5	5.9	6.6	None	+	Spontaneous	Afebrile	Living and well
Desultory labor	25	15	4.5	8.9	None	+	Spontaneous	Afebrile	Living and well
Desultory labor	28	1	1	trace	None	-	Spontaneous	Afebrile	Living and well
Desultory labor with ante partum intrauterine infection: <i>B. lactis</i>	29	18	6.4	?	Severe	+	Spontaneous	Afebrile	Living and well
Ante partum intrauterine infection: anerobic nonhemolytic strep.	11	29	8.3	?	Mild	+	Spontaneous	Afebrile	Living and well
Ante partum intrauterine infection: clinical	12	13	6.3	?	Mild	+	Spontaneous	Afebrile	Living and well
Urinary tract infection: aerobic nonhemolytic strep.	12	30	?	?	Severe	-	Spontaneous	2-day fever	Living and well
Bronchopneumonia following status epilepticus	7	4	5.1	?	Severe	-	Spontaneous	Afebrile	Died 24 hrs. cerebral hemorrhage
Premature rupture membranes—84 hrs.	10	7	6.3	5.7	None	+	Spontaneous	Afebrile	Living and well
Infected abortion	..	13	10.3	...	Mild	Afebrile

A More Intensive Immunization Programme ^{*}

DR. W. C. MCKEOUGH

Medical Health Officer, Sydney Mines, N. S.

I HAVE the permission of the Chief Health Officer to quote a short section of the report which he, as Chairman of the Committee on Public Health of the Nova Scotia Branch of the Canadian Medical Association, will present when that Society convenes tomorrow.

As a member of that committee, I was privileged to see a copy of that report before its presentation.

The brief section I wish to quote is this: "Those communicable diseases for which we possess immunizing agents showed a *tendency* to decrease. There are, however, too many children who have not yet received the protection afforded by diphtheria toxoid."

These two terse statements of facts, which, coming from the Chief Health Officer who is in possession of all the relevant statistics, we must accept as statements of facts, reveal such an unsatisfactory condition, and constitute such a direct challenge to this Association of Health Officers, that, I feel, we must seriously review our entire immunization program, searching out its defects, and planning more effective prosecution.

We cannot feel that we have fully discharged our duties as Health Officers, until the Chief Health Officer can incorporate in his annual report such sentences as these: "Those communicable diseases for which we possess immunizing agents have now entirely disappeared in the age group of six months to six years. There is not now in this province, from Cape North to Cape Sable, one solitary child, in that age group, who has not been protected with toxoid."

The attainment of such a worth-while objective is not impossible, but it will demand of the Medical Health Officer patient and persevering attention to many details.

As the factors which influence success or failure are reasonably constant in all our provincial towns, I will briefly summarize what has been accomplished in my own town of Sydney Mines. While our achievements fall far short of the high ideal just proposed, still, we have overcome some of the obstacles which retarded progress in the early stages of the program, and are now on the road to greater success.

Sydney Mines is a town of just over 8,000 population. The scheme of immunizing against diphtheria, by the clinic method, was first mooted in our town about twelve years ago. The president of a ladies' organization had asked me to speak on appendicitis at one of their meetings. The subject seemed unsuitable, so I suggested selecting my own subject, and attempted to tell them something about protecting our children for life against diphtheria, urging them to undertake some Missionary work and prepare the ground for future clinics. Apparently they worked with a real zeal, for in a short time several other ladies' organizations, likewise, wished to learn about this scheme. In time it became the favorite topic of debate wherever the ladies assembled, and the argument pro and con was usually heated.

^{*}Paper delivered at the annual meeting of the Nova Scotia Health Officers' Association, Kentville, N. S., July 6, 1943.

Should it appear that I have entered into rather unnecessary detail in recording an account of these meetings, let me repeat with that illustrious Cape Breton author and grammarian, James D. Gillis. "I do not say this by way of boast." I have so entered into detail solely to stress a point which I hope to be of the greatest importance, a point which I shall embody as a recommendation later on.

Our earlier clinics were devoted to the lower grade school children. Not to burden you unduly with figures I will make a brief analysis of the 1941 and 1942 clinics only.

In 1941 a whooping cough clinic was held for pre-school age children, at which 161 attended for the first dose. Nineteen of these failed to report for the second, and another 22 failed to receive the third. So that of the 161 only 120 completed all three stages. This falling by the wayside would seem to be the chief draw-back in such a type of clinic. It can, I believe, be largely eliminated with the system we now use, which shall be outlined later.

Also in 1941 there was held a toxoid clinic, for both school and pre-school children, at which 161 started and 103 completed all three stages. These two clinics made up a total of 830 inoculations in 1941.

In April, 1942, we held a toxoid clinic, at which 363, nearly all pre-school age, attended. Of this splendid turnout 318 completed all three inoculations, a rather improved showing. A clinic of this size proving so unwieldy for one morning's work, coupled with the problem of the disappointingly large percentage who failed to complete the series, that it was decided, under Dr. Beckwith's advice, to adopt a scheme already functioning at the two Glace Bay Hospitals. Under this plan a clinic is held weekly, at which children over 6 months of age and not yet in school, are immunized for diphtheria, whooping cough, scarlet fever, and small-pox. This promises to be the ideal system and is strongly recommended.

Our series opened on Oct. 28, 1942, and after nine had been held, the unusual severity of the early winter, coupled with the impossibility of the interested parents to secure taxi service, forced a winter recess after the Dec. 30th clinic. Three of the nine clinics held unfortunately fell on days marked by severe storms. The average attendance at the other six was forty-four, the maximum being 57.

One moment more, please, and I will have finished with figures. The 270 children immunized at these weekly clinics give the following breakdown in age groups.

Under 1 year.....	72
One to four years.....	167
Four to six years..	31

No comment on the importance of these figures is necessary. Let me repeat, this weekly clinic method is well worth a trial.

Our prize toxoid clinic of 363 was held during National Toxoid Week in April, 1942, following the radio and press publicity devoted to the value of toxoiding. A maximum attendance of one hundred had been estimated so our surprise and gratification were beyond expression, when three hundred and sixty-three, almost exclusively pre-school age children, attended and were toxoided that morning. We realized that, at last, those reactionaries who had so loudly condemned the horrible procedure of sticking a needle in those

precious babies' arms had lost their battle, and that the younger generation of parents was alive to its responsibilities.

To appreciate properly just what a single clinic of 363 represents in a population of 8,000, just multiply that number by ten, which, I believe, conservatively represents the ratio of our population to that of the capital City of Halifax, and you would have the startling figure of 3,630 pre-school age children toxoided on one day. I trust the Commissioner of Health for Halifax will not consider me unduly impertinent in making such a comparison, but I cannot help thinking that a few such clinics of pre-school age children, in the medical teaching centre of our province, would soon bring about the unconditional surrender of that Nazi of all the bugs, the Klebs-Loeffler Bacillus.

As the primary purpose of this paper, as indicated by its heading is to urge a more effective immunization program throughout the entire province, I make no apology for offering a suggestion whereby Halifax might cope more effectively with its Communicable Disease problem.

Realizing that the duties of the Commissioner of Health for Halifax are so onerous, particularly under the conditions of feverish war activity now prevailing there, that full attention to the matter of immunization is impossible, my humble suggestion would be that Halifax seriously consider the appointment of a full time Medical Health Officer, working under the Commissioner of Health, whose sole duty would be the organization and active prosecution of an adequate immunization scheme. I believe the incidence of those communicable diseases would be so strikingly reduced, and the Halifax press take such enthusiastic notice thereof, that its editorials would react beneficially throughout the entire province, and that we, outside of the Capital, who look thereto with pride as our medical teaching centre, might likewise rejoice at its position of leadership in immunization, and be stimulated to greater efforts by that example.

In any community the children to be immunized, or rather the parents of those children, may be divided into these three groups: (A) Those who are anxious to have their children immunized. This is by far the largest group. All that is necessary with this group is to announce the date, time and place of the Clinic. Their cheerful co-operation is most heartening. At much inconvenience, for transportation is so restricted to-day, they willingly attend.

(B) The indifferent parents. This group is not inconsiderable in size and will provide your chief headache. We have worked out the following tentative scheme for this group. It has not yet been practically tested to any extent because the first group is providing a suitably sized clinic. But once that reservoir shows signs of drying up a concerted drive will be made on this second group. On each street or section of street, I have asked a mother, of the discreet type, to give me confidentially, the names of those families negligent about getting their children to the clinic. This list is gradually being added to. Some turn up voluntarily at the clinic and their names are then removed from the list of delinquents. I have secured a small committee of tactful and energetic women to contact these parents and by their best powers of persuasion attempt to get them to the clinic. If persuasion fails, they are quite prepared to apply more drastic pressure. Perhaps some day our legislative bodies will get around to considering compulsory immunizing of this group.

(C) This third group is much smaller, but should not be overlooked. It is made up of those mothers who, due to semi-invalidism, lack of worldly possessions, or some other unavoidable cause, cannot send their children to the clinic. The solution here is obviously simple.

By these different means, supplemented by an occasional exhortation from the various pulpits of the community, and the use of such other agencies as may be suitable in your respective districts, the attainment of that high ideal suggested, is, after all, not so impossible.

In considering the factors necessary for the success of an immunization program, I would place in the very fore front the absolute necessity of educating our parents to the benefits of immunization.

The duty of carrying out such an educational program devolves, to my mind, upon both the central Department of Public Health, and the individual Medical Health Officer.

I would strongly advocate that a radio program of appropriate frequency and duration, be sponsored by the Department of Public Health, wherein a discussion not only of immunization, but also of all other subjects which properly enter into the realm of public health, would be brought regularly into the homes of our people. It would be, indeed, but following the lead of the Department of Agriculture, which instructs our farmers on the subject of raising better livestock.

Such a radio period should be supplemented by more frequent press publicity. I believe I am not far astray in saying that, outside of a few editorials immediately preceding and during National Toxoid Week, the Halifax press has carried but two brief editorials, and the Sydney press but one, of which I am aware, during the intervening fifteen months. That is not good enough. Unless we, as members of this Association, convince the people of this province that we are firmly sold on immunization, and boosting it every day of the year, we cannot blame them for indifference in protecting their children.

I have stated that a part of the duty of educating our people rests upon the Medical Health Officer in his own district. He must avail himself of every opportunity to spread the gospel of immunization. Nay, more, he must create for himself opportunities of spreading that gospel. I have already indicated in some detail how every women's organization in your district can aid. The various men's organizations can be used equally well. Do not overlook your Lodge, Rotary or other service club, A.R.P., etc.

Now, I am sure some of you gentlemen are saying, "Good Lord, this is a program for a full time Medical Health Officer." That would be the ideal solution, but, I fear, is yet some distance away. So that this fact now clearly emerges and must be faced. It is evident that until the day of the full time M.H.O. arrives, an immunization program such as I have briefly outlined cannot be carried out effectively, unless the M.H.O. responsible for the success of that program receives a reasonable wage for his services. That, I hold, is axiomatic.

What are the possibilities of securing such a reasonable wage? I believe they are good. I believe all that is necessary, is proper enlightenment of the citizens. The great majority of our people are now so alive to the necessity of immunization that they demand it as a civic service, just as they demand, say, police protection. And, furthermore, the great majority of people are reasonable. They do not demand a civic service without the civic treasury

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Such a radio period should be supplemented by more frequent press publicity. I believe I am not far astray in saying that, outside of a few editorials immediately preceding and during National Toxoid Week, the Halifax press has carried but two brief editorials, and the Sydney press but one, of which I am aware, during the intervening fifteen months. That is not good enough. Unless we, as members of this Association, convince the people of this province that we are firmly sold on immunization, and boosting it every day of the year, we cannot blame them for indifference in protecting their children.

I have stated that a part of the duty of educating our people rests upon the Medical Health Officer in his own district. He must avail himself of every opportunity to spread the gospel of immunization. Nay, more, he must create for himself opportunities of spreading that gospel. I have already indicated in some detail how every women's organization in your district can aid. The various men's organizations can be used equally well. Do not overlook your Lodge, Rotary or other service club, A.R.P., etc.

Now, I am sure some of you gentlemen are saying, "Good Lord, this is a program for a full time Medical Health Officer." That would be the ideal solution, but, I fear, is yet some distance away. So that this fact now clearly emerges and must be faced. It is evident that until the day of the full time M.H.O. arrives, an immunization program such as I have briefly outlined cannot be carried out effectively, unless the M.H.O. responsible for the success of that program receives a reasonable wage for his services. That, I hold, is axiomatic.

What are the possibilities of securing such a reasonable wage? I believe they are good. I believe all that is necessary, is proper enlightenment of the citizens. The great majority of our people are now so alive to the necessity of immunization that they demand it as a civic service, just as they demand, say, police protection. And, furthermore, the great majority of people are reasonable. They do not demand a civic service without the civic treasury

Department of Public Health sponsor an educational program, wherein it shall strive to convince our people of the absolute necessity of having their children immunized, and wherein it shall strive to educate our electors to the necessity of having their Health Officers receive a reasonable salary, and, further, seeing to it that the Health Officer, in return, carries out an active immunization program commensurate with such reasonable salary.

In conclusion, may I say, speaking as the Health Officer of Sydney Mines, and preempting the right to speak for all the Health Officers of Cape Breton, that whatever little success we have attained in that Island Section of our province, has been due almost solely to the inspiring missionary zeal of our indefatigable District Health Officer, Dr. Charles Beckwith. Working under his guidance is both an inspiration and an education.

Wanted **BACK NUMBERS OF THE** **NOVA SCOTIA MEDICAL BULLETIN**

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VOL. 2, 1923, No. 1, 2, 4, 5.

(Only five of each of these appeared.)

VOL. 3, 1924, No. 1, 2, 5, 9, 11.

VOL. 4, 1925, No. 1, 2, 3, 4, 5, 11, 12.

VOL. 5, 1926, No. 1, 2, 3, 4, 11.

VOL. 6, 1927, No. 7 (July).

VOL. 15, 1936, February and November.

Recent issues of the BULLETIN will always be gratefully accepted.

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Editor's Column

Writing on State Medicine as a possibility in Britain Dr. J. B. W. Hayward, M.B., Ch.B., says in part in the *British Medical Association Journal* of October 16, 1943:

It follows, that any reorganization of the medical profession and the health services will affect the great democratic public. Are they, the patients, aware of the sense of freedom they are going to lose? The possible penalties they may incur if they refuse treatment? The certain loss of a portion of their cherished right and privilege of professional secrecy, when the doctor has his "quarterly returns" to fill in? The criminal view that must be taken by the State of neglect and failure to carry out treatment calculated to restore the patient to health in the shortest possible time in order that he may return to work? And also the slightly lowered prestige of the family doctor if he becomes completely a servant of the State, thereby losing some of his independence, which has been treasured in the past as much by his patients as by the doctor himself? Let the legislators take care that they, and the vast number of individuals they represent, are aware of all the implications that the phrase "comprehensive health service" means.

Personal Interest Notes

THE BULLETIN extends congratulations to Dr. Hugh A. Fraser of Bridgewater and also to Dr. Raymond H. Fraser of New Waterford who have become Fellows in the American College of Surgeons. Dr. H. A. Fraser graduated from the Dalhousie Medical School in 1929 and then went to the Charity Hospital in Cleveland, where he spent three years. Since then he has been practising in Bridgewater and is now attached to the R.C.A.F. Dr. R. H. Fraser graduated from the Dalhousie Medical School in 1932, and has been practising in New Waterford, and is now attached to the R.C.N.

Dr. L. B. Woolner, assistant to Dr. R. P. Smith, Provincial Pathologist, left at the end of December for Costa Rica where he will take a six weeks' field course in tropical diseases. Some little time ago Dr. Woolner took a course in tropical medicine at the Army Medical School, Washington, D.C. The arrangements for these courses were made through a committee of the Association of American Medical Colleges, and The John and Mary R. Markle Foundation have assumed all the expenses. Medical schools all over America were advised to train at least one member of their staff in tropical medicine in order to be prepared for the possibility of the introduction of so-called tropical diseases into Canada. Dr. Woolner is expected to return about the middle of February.

Hospitals in Province Approved

Eighteen hospitals in Nova Scotia have been awarded full or provisional approval by the American College of Surgeons for the year 1943 as revealed in the annual survey concluded in December, results of which were announced recently.

In Canada and the United States a total of 3,253 hospitals received approval, an increase during the year of 264.

"The past two war years have seen hospitals and doctors score a major triumph over disease and death under circumstances that in previous years would have meant epidemic and a rising mortality rate," said Dr. Irvin Abell of Louisville, chairman of the board of regents.

"Instead, the death rate in 1942 reached an alltime low of 10.4 per thousand in the United States death registration area, and 9.9 in Canada, and the indications are that in 1943 the rate was even lower.

"The reasons for the improved results despite the war-time handicaps are plain to those members of the profession and the public who know how hard hospitals have struggled to give patients high quality care notwithstanding shortages of personnel, scarcities of supplies, and increased demand for service."

Approved hospitals in Nova Scotia follow. The asterisk (*) signifies provisional approval. Those hospitals have accepted and are endeavouring to meet the requirements, but for acceptable reasons have not been able to do so in every detail, or were not at the time of survey complying sufficiently to merit full approval.

	Beds
AMHERST:	
*Highland View Hospital	88
ANTIGONISH:	
St. Martha's Hospital	127
DARTMOUTH:	
Nova Scotia Hospital	500
GLACE BAY:	
Glace Bay Hospital	184
St. Joseph's Hospital	185
HALIFAX:	
Camp Hill Hospital	850
*Children's Hospital	80
Grace Maternity Hospital	116
Halifax Infirmary	315
*Halifax Tuberculosis Hospital	66
Victoria General Hospital	300
KENTVILLE:	
Nova Scotia Sanatorium	370
NEW GLASGOW:	
*Aberdeen Hospital	132
NORTH SYDNEY:	
*Hamilton Memorial Hospital	68
SYDNEY:	
City of Sydney Hospital	110
St. Rita's Hospital	56
WOLFVILLE:	
Eastern Kings Memorial Hospital	35
YARMOUTH:	
Yarmouth Hospital	76

The marriage took place in December of Miss Dorothy May McKay, third daughter of Mrs. Katherine McKay and the late W. J. McKay, Halifax, and Lieutenant Douglas C. Simms, R.C.A.M.C., son of Mr. and Mrs. R. H. Simms, St. John's, Newfoundland. The bride was an employee of the Phinney Music Company, Halifax, and the groom graduated from Dalhousie Medical School on September 1, 1943.

The BULLETIN extends congratulations to Dr. and Mrs. G. W. Turner of Windsor on the birth of a daughter, Sandra Ann, on November 28th; to Surgeon Lieutenant and Mrs. J. R. Kerr (Shirley Kirkpatrick) at St. John's, Newfoundland, on December 1st, a daughter; to Dr. and Mrs. G. Fred Day (Mima Grant) of New Glasgow on December 3rd, a daughter, Jeannie Kay;

to Captain (overseas) and Mrs. C. L. Gosse (Betty Carten), at Halifax, on December 9th, a daughter, and to Flight Lieutenant and Mrs. E. Pau Nonamaker (Vivian Graham) of Mahone Bay, at Halifax, on December 21st a son.

Dr. Rice and Dr. DuVernet Honoured

Members of the medical staff society of the Digby General Hospital together with a number of guests from the medical staff of H.M.C.S. "Cornwallis" met at a specially arranged dinner, at Jersey Farm, Digby December 8th, to honour two Digby County doctors, both staff members who have each completed fifty years of general practice in that district. The doctors honoured were F. E. Rice of Sandy Cove and E. DuVernet of Digby. Dr. L. F. Doirin, president of the medical staff society, presided.

During the evening Dr. W. C. Harris of Barton presented a cane to each guest of honour. Dr. DuVernet spoke, expressing his appreciation of the honour shown him and his colleague, and gave an interesting talk concerning many of his early experiences in the district in which he has done all his work. Dr. Rice spoke briefly, and thanked the doctors for their gift. Surgeon-Lieutenant Commander Denton spoke on behalf of the medical officers of H.M.C.S. "Cornwallis" and of their pleasure in taking part in the complimentary dinner, honouring men of the profession who have devoted long lives in helping others.

Dr. H. K. MacDonald of Halifax, who has been a patient at the Victoria General Hospital suffering from pneumonia is back in practice.

Major C. M. Bethune and Captain C. E. G. Callahan receive O.B.E. Three Army men from Halifax won awards in the New Year's Honours List for the Canadian Army. All three are made additional members of the Military Division of the Most Excellent Order of the British Empire. They are: Major Clarence Melville Bethune, R.C.A.M.C., now on active service in North Africa; Captain Charles Ernest Gregory Callahan, armament officer at Halifax Fortress Headquarters; and Warrant Officer Class 1 Wilfred Robie Stevens, R.C.A.P.C., now serving in London, England.

A native of Baddeck, where he was born on March 22, 1904, Major Bethune graduated in medicine from Dalhousie University in 1931, and for two years was assistant superintendent of the Victoria General Hospital, Halifax. Then, after taking post-graduate courses in Montreal and Boston, specializing in anaesthetics, he set up in practice in Halifax, where he remained until the outbreak of the war. In 1934 and 1935 he served with a field ambulance unit in the N.P.A.M. Enlisting in September, 1939, with the rank of Captain in the R.C.A.M.C., he was promoted to Major in August, 1941, and three months later went overseas. A brother, Captain R. O. Bethune, is on the staff of the Halifax Military Hospital. His mother, Mrs. Mary Catherine Bethune, lives at Baddeck.

Captain Callahan is a native of Boylston, Guysborough County. He enlisted during the First Great War in 1918 with the Canadian Engineers

at the age of 17, but the war was over before he could get overseas. A few months after demobilization he re-enlisted in the Royal Canadian Garrison Artillery in Halifax, now the Royal Canadian Artillery. At the outbreak of war he held the rank of second class master gunner, and in July, 1940, was commissioned, being promoted to Captain in February, 1942. He is married to the former Violet Stephen of Halifax.

Dr. Clarence N. Morrison of New Waterford spent the Christmas week-end with his father, Dr. M. D. Morrison in Halifax.

Dr. D. J. MacMaster returned to his home in Antigonish early in January after spending a few weeks in Montreal.

Dr. C. E. A. deWitt who has been serving for the past three years in the active army, in which he held the rank of Lieut.-Colonel retired in October, 1943, and has returned to his practice in Wolfville.

The following account from the Halifax Mail of November 24, 1943, dealing with the experiences of one of the graduates of Dalhousie University is printed on account of its interest to our readers. Lieutenant-Commander Gordon M. Bruce, former New York physician, and a son of the late Alfred D. and Mrs. Bruce, of Shelburne, N. S., has given a graphic description of U. S. Navy doctors carrying on their task of performing operations under attack from the Japs. The attack was made on a U. S. Navy field hospital in November on Bougainville Island. The patients undergoing operations were Marines wounded in landing operations.

Lieutenant-Commander Bruce will be recalled by many friends in Nova Scotia. At one time he played on the football team of Dalhousie University at Halifax. Later he was a crewman at Columbia University. After graduating from Dalhousie Medical School in 1925 he took a post-graduate course at Oxford. He married Miss Daisy Hallett, Weymouth, and they have two children. Mayor R. G. Irwin, Shelburne, is a brother-in-law of the Navy doctor.

At time of being called for duty Lieutenant-Commander Bruce lived in Englewood, N. J., and was assistant professor of clinical ophthalmology at the College of Physicians and Surgeons, Columbia University.

In charge of the hospital, which was under attack, Lieutenant-Commander Bruce, in a press dispatch, was quoted as saying:

"We set up our tents near the beach on the left flank. At noon marine casualties from the section began coming in, and at one o'clock we had thirty-two patients. The Japs began their attack on the hospital there.

"My surgeons were operating on a marine when shots ripped through the tent. I ran to the beach with a couple of Corpsmen and unscrewed three machine guns from Higgins boats which were smashed in the heavy surf in the original landings. We brought the guns back to the hospital and I drafted a few marines to operate them, and set up a defence line. A sniper's bullet

smacked through the top of the tent and went into the lung of a chief pharmacist's mate. We evacuated him at once.

"It began to rain, and water filled up our foxhole operating rooms. At two o'clock the firing increased, and I sent a runner to ask a marine infantry commander on the beach for help. He had only fifteen men and couldn't spare them. Then I got two marines plodding up a jungle trail to take up guard positions in the jungle thirty feet from the tent. The corpsmen helped in operations and piled sandbags around tents as the firing increased.

"Finally a platoon of marines came to our aid and set up a defensive position. My surgeons continued operating until nine o'clock. Only then did they evacuate the patients, now numbering fifty."

He added that the operations, including some brain surgery, had been performed under small battery-powdered lights, but that not one patient had died during the day.

Obituary

THE BULLETIN extends sympathy to Dr. I. R. Sutherland of Annapolis Royal on the death of his wife, Alberta May (Foster) which occurred following an attack of influenza on December 26th. Mrs. Sutherland was born in Round Hill, later moving with her parents to Granville Ferry, and after her marriage in 1936 living in Annapolis Royal. Mrs. Sutherland trained as a nurse in the Saint John General Hospital. She is survived by her husband, an adopted son, Max, her father and mother, and one sister and one brother.

NEWS FROM THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS, 120 BROADWAY, NEW YORK 5, N. Y.

The establishment of the first center for the scientific study and development of physical medicine as a branch of medical practise was announced recently by Basil O'Connor, President of The National Foundation for Infantile Paralysis. The center will be in the Graduate School of Medicine of the University of Pennsylvania at Philadelphia.

To set up this center, Mr. O'Connor stated, The National Foundation for Infantile Paralysis has made a grant totalling \$150,000 for a five-year period from January 1, 1944, to December 31, 1948.

Mr. O'Connor said, "We believe this to be one of the most important steps which the National Foundation has taken. This will not only advance the treatment of infantile paralysis, but of many other diseases as well."

Mr. O'Connor explained that to-day there is no school or department connected with any of the medical training centers which is equipped to explore thoroughly on a sound scientific basis the possibilities of physical medicine.

This is but the first step in a program which, Mr. O'Connor said, should afford a scientific basis for physical therapy and lead to the establishment of a more desirable teaching program.

"If this branch of medicine can be given a sound professional standing," Mr. O'Connor declared, "medical men of the highest calibre will be attracted to it and practitioners will fully utilize its advantages. If research and study show there is little or no basis for treatment by some of the physical agents, then an equally great service will have been rendered, even though it be principally negative in character.

"Physical medicine plays a most important part in the treatment of infantile paralysis. Since it was first organized, the National Foundation has been continuously concerned with this phase of treatment. It has spent during the past six years over \$350,000 to educate and train physical therapy technicians. An additional \$364,000 has been granted to laboratories and universities to study many problems in physiology and medicine having a close connection with the practice of physical therapy, but never before has it been possible to combine in one place both medical research and teaching in this important field."

The center for Research and Instruction in Physical Medicine will include:

1. A center for development of physical medicine as a scientific part of the practice of medicine.
2. A training center for medical leaders and teachers in this branch of medicine, and
3. A school for training technical workers under the guidance of such professional and scientific leadership, such a school to be only incidental to and dependent upon the first two purposes.

The Departments of Anatomy, Physiology, Pathology and other basic sciences of the University of Pennsylvania will cooperate in this proposed program. The general direction will be assigned to Dr. Robin C. Buerki, Dean of the Graduate School of Medicine.

THE MEAD JOHNSON VITAMIN B COMPLEX AWARD

Nominations are solicited for the 1944 award of \$1,000 established by Mead Johnson and Company to promote researches dealing with the B complex vitamins. The recipient of this award will be chosen by a committee of judges of the American Institute of Nutrition. The award will be given to the laboratory (non-clinical) or clinical research worker in the United States or Canada who, in the opinion of the judges, has published during the previous calendar year January 1 to December 31 the most meritorious scientific report dealing with the field of the B complex vitamins. While the award will be given primarily for publication of specific papers, the judges are given considerable latitude in the exercise of their function. If in their judgment circumstances and justice so dictate, it may be recommended that the prize be divided between two or more persons. It may also be recommended that the award be made to a worker for valuable contributions over an extended period but not necessarily representative of a given year. Membership in the American Institute of Nutrition is not a requisite of eligibility for the award.

To be considered by the committee of judges, nominations for this award for work published in 1943 must be received by the secretary, Arthur H. Smith, Ph.D., Wayne University College of Medicine, Detroit, by January 10, 1944. The nominations should be accompanied by such data relative to the nominee and his research as will facilitate the task of the committee of judges in its consideration of the nomination.

SHOULD VITAMIN D BE GIVEN ONLY TO INFANTS?

Vitamin D has been so successful in preventing rickets during infancy that there has been little emphasis on continuing its use after the second year.

But now a careful histologic study has been made which reveals a startling high incidence of rickets in children 2 to 14 years old. Follis, Jackson, Eliot, and Park* report that postmortem examination of 230 children of this age group showed the total prevalence of rickets to be 46.5%.

Rachitic changes were present as late as the fourteenth year, and the incidence was higher among children dying from acute disease than in those dying of chronic disease.

The authors conclude, "We doubt if slight degrees of rickets, such as we found in many of our children, interfere with health and development, but our studies as a whole afford reason to prolong administration of vitamin D to the age limit of our study, the fourteenth year, and especially indicate the necessity to suspect and to take the necessary measures to guard against rickets in sick children."

* R. H. Follis, D. Jackson, M. M. Eliot and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, *Am. J. Dis. Child.* 66: 11, July 1943.