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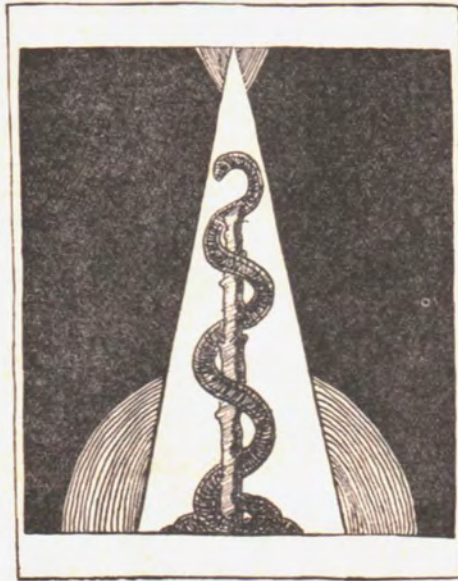
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VOLUME I

NUMBER 2

University of Western Ontario

MEDICAL JOURNAL



December, 1930

LONDON

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Vol. I., No. 2

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Congenital Hypertrophic Pyloric Stenosis

H. O. FOUCAR, M.D.

*Department of Surgery, Medical School, University of Western Ontario,
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CONGENITAL hypertrophic pyloric stenosis was first described on this side of the water, its surgical significance recognized, and the first operation attempted. The honor of the first successful operation, however, belongs to Europe. There are no recoveries in the whole field of surgery more spectacular than those following the Rammstedt operation.

The pathological conditions resulting in pyloric stenosis may be classified as follows:—

(a) In the infant:

1. Malformations, such as atresia, absence of duodenum or presence of a diaphragm within the duodenum.
2. Congenital hypertrophic pyloric stenosis.
3. Pylorospasm.

(b) In the adult:

1. Reflex pylorospasm.
2. Pyloric stenosis, due to scarring of old ulcer, malignancy or pressure from without.

My remarks will be limited to a discussion of congenital pyloric stenosis, that interesting condition which was first described by Hezekiah Beardsley² in 1788, in the Transactions of the New Haven County Medical Society. He gave an accurate description and made the diagnosis four months before the patient's death. The post-mortem examination showed a dilated and hypertrophied stomach, and "the pylorus was invested with a hard compact substance or scirrhusity which so completely obstructed the passage into the duodenum as to admit with the greatest difficulty the finest fluid." Schwyzer³ reported a post-mortem examination, in 1896, and concluded that "the diagnosis being once established, surgical interference alone will be of any avail or benefit to the patient, either Loreta's operation (laparotomy, opening of the stomach and dilating the stenosed pylorus) or else simple gastroenterostomy." He seems to have been the first to suggest surgical intervention. Two years later Meltzer reported that Meyer performed a Murphy button gastroenterostomy on an infant six weeks of age,

the patient dying thirty hours later due to obstruction from the Murphy button. In 1900 Nicoll⁷ reported a case successfully treated by the Loreta operation performed on July 2, 1898, and he was under the impression that this was the first successful operation. Lobker⁸ published in the same year the report of a successful gastroenterostomy performed in 1898; while Abel,¹ in 1899, also laid claim to the first successful case (anterior gastroenterostomy performed by Kehr). Stiles,¹⁰ in 1900, resected the pylorus in one case with fatal results. In 1903 Cautley³ and Dent collected 19 surgical cases and concluded that pyloroplasty (cutting through the ring and extending the incision into healthy tissue on either side and uniting the incision transversely) was best. Dufour⁴ and Fredet (1908) and Rammstedt⁵ (1912) developed the operation which is here described. There have been several modifications of the operation but it is questionable whether they have any advantage over the original.

In the typical case of congenital pyloric stenosis, there is no difficulty in recognizing the symptoms: (1) projectile vomiting; (2) visible peristaltic waves in the epigastrium, elicited by flicking the abdomen or giving the infant water; (3) progressive loss in weight; (4) presence of a palpable nodule to the right and above the umbilicus, often masked, however, by the liver; (5) lessening or absence of bowel movements. X-ray examination reveals an obstruction at the pylorus, though resort to this test is seldom made. In a suspected case, it is essential to search carefully and repeatedly for the nodule; for its presence is considered by many as an absolute indication for immediate operation.

The conditions which must be considered in differential diagnosis are congenital esophageal obstruction, congenital malformations of the pylorus, intestinal obstruction (due to faulty rotation, congenital bands or adhesions, or intussusception), brain tumor, meningitis (either cerebrospinal or tuberculous), and feeding problems. As a rule these present little difficulty. The greatest difficulty lies, however, in differentiating between stenosis and pylorospasm. In spasm we usually get relief when atropine is pushed to the limits of tolerance; the course may be intermittent, *i.e.*, the infant retains the occasional feeding and the typical nodule is not present, although some indefinite thickening in the pylorus may occasionally be noticed.

All cases presenting these symptoms should be under active medical supervision. The stomach should be washed with sodium bicarbonate solution to remove mucus, and atropine sulphate should be given before each feeding. Thick cereal feedings may be tried. As long as the infant holds its own, it is safe to continue medical care. If a nodule is palpable or if the infant loses steadily, it is probably a case of stenosis, and it is wise to consider surgery before the patient has lost too much and become moribund. In doubtful cases, it is safer to explore, for improvement after surgical intervention is usually prompt. It is true that some report recoveries after a long regime of medical care; but the question of the relative risk arises, and many feel that it is safer

to advise operation with its short period of convalescence than to risk a long period of medical care which may require resort to surgery in the end.

Congenital hypertrophic stenosis and pylorospasm represent two extremes, and all gradations between them may be observed,—marked hypertrophy of the circular muscle fibres and no spasm, hypertrophy with superimposed spasm, and shading off into cases of pure spasm. As an example of this, I remember one infant who vomited forcefully while being examined. Typical peristaltic waves were visible. This was the first and last time that the patient vomited. It represents the simplest case of pylorospasm that has come under my observation. At one end of the scale is the surgical group, at the other the medical. The cases selected by the surgeon, therefore, are those in which the symptoms are definite, and nothing is to be gained but much to be lost by delay, and those who have had medical care for a longer or shorter period of time, and who are not improving. The physician has a responsibility towards these cases, in seeing that they are not allowed to become too weak under his regime. If they improve, continued medication is justified, but if not, surgery should be considered before they collapse.

No case is in such a state that it must be taken immediately to the operating-room. The sicker the patient the more need there is for subcutaneous glucose solution (avoiding the site of operation) or for transfusion. The patient's immediate danger is from dehydration, and this should be relieved first. Whether a general or local anæsthetic is used depends on the surgeon. With the former, the technical procedure is easier, for there is less straining and the closure is simplified. On the other hand, it adds a risk in itself. Personally, I favor a local infiltration of the abdominal wall. The patient is held by nurses, sucks continually a small gauze pad containing sugar and often drops to sleep. The operation takes longer, for there is some movement and straining, making the closure more difficult, particularly if the stomach or viscera have been extruded. On the whole, this procedure has seemed the safer to me, and the degree of inconvenience to the child appears to have been negligible. A small incision is made in the upper right rectus muscle, and the pylorus located and brought into the operative field. A longitudinal incision is made through the white gristly mass where the vessels are least prominent, care being taken not to injure the mucosa. This accident is most likely to occur at the duodenal end of the incision. The mucosa is allowed to bulge forward. A hot pack usually takes care of any bleeding points. Saline solution may be poured into the peritoneal cavity if desired. The incision is closed in the routine manner.

The post-operative care is most important. The infant needs fluids, which should be given by bowel and subcutaneously; and a transfusion may be necessary. The infant is fed measured quantities of breast milk or protein milk, one ounce every four hours, increasing as the infant retains it. If the infant is too weak, a Breck feeder should be used or a catheter may be passed into the stomach and the infant tube fed, thus

conserving its strength. The use of atropine should be continued and, if there is any tendency to regurgitation, the stomach, before feedings, should be washed out with warm sodium bicarbonate solution to dissolve the mucous which is often present in excess. Brandy is used, also camphor in oil when necessary.

The usual complications to be feared are leakage from injured mucosa, peritonitis, hemorrhage, incomplete operation resulting in persistence of symptoms, a plug of thick mucous obstructing the lumen, feeding difficulties and poor healing of the wound with eventration.

A brief resumé of six cases may be of interest.

Case No. 1—Baby S., male, birth weight nine and one-half pounds, age on admission 3 weeks, weight seven pounds, one ounce. Peristaltic waves were present and a nodule was palpable. A Rammstedt operation was done. The immediate condition was fair, followed by collapse with recovery and slow convalescence. In seven weeks he weighed ten pounds. Two years later he was the picture of health.

Case No. 2—Baby C., male, premature. He began regurgitating a small amount after each feeding shortly after birth. This gradually increased until he vomited practically the whole of his feedings. At four weeks of age he weighed six and one-half pounds and he presented all the typical signs and symptoms. An operation was performed from which there was an uneventful recovery. He was dismissed twelve days after operation.

Case No. 3—Baby Z., female, full term, birth weight six pounds and three ounces. There was projectile vomiting and loss of weight for two weeks. The age on admission was five weeks with weight four pounds and eleven ounces. All typical signs were present. During the operation I nicked the mucosa at the lower end but was able to place a stitch in the serosa which closed it. She was dismissed in five weeks, weighing six pounds, nine ounces.

Case No. 4—Baby R., male, birth weight nine pounds. There was projectile vomiting for one week with all signs present. The general condition was good. Age at operation was two weeks, weight seven pounds. There was an uneventful recovery, the patient going home in two weeks, weighing eight pounds, eight ounces.

Case No. 5—Baby McL., male, age four weeks on admission, weight six pounds. The symptoms were typical in that he had good bowel movements. The vomiting was intermittent, some of the feedings being retained, and no nodule could be felt. In two days the weight dropped to five pounds, four ounces, and it was considered inadvisable to wait. A transfusion was given and the Rammstedt operation was performed, the typical nodule being present. The convalescence was rapid and he was dismissed in two weeks, weighing seven pounds, four ounces.

Case No. 6—Baby H., male, age four weeks, projectile vomiting for six days, toxic, dehydrated, temperature 103, pulse 140, resp. 30. The abdomen was tense, with peristaltic waves present, and a nodule could be palpated. It was realized that this case was complicated by some

infection, the nature of which we could not determine, and that operation was a forlorn hope. Nevertheless, the surgical indications were clear and the child had no other chance. On opening the abdomen, free fluid, brownish in color, was found. The pyloric ring was cut and the immediate post-operative condition was fair. Twenty-four hours later the temperature rose to 106, and the patient died thirty-six hours after the operation. No autopsy was performed.

In this small series, there was a mortality of sixteen percent., with no deaths, however, in the uncomplicated cases. Without operation their outlook seemed hopeless. Local anæsthesia was used in each case. In every instance the nodule was demonstrated at operation. A transfusion was given in one. Some of the cases required little post-operative care, while one required every attention. Five out of the six were males. The youngest was two weeks of age and the smallest weighed four pounds, eleven ounces.

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Organic Heart Disease*

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(Reported by A. W. Hoppins.)

HEART lesions may be grouped as follows: the toxic, rheumatic, bacterial, hyperthyroid, hypertensive, and senescent heart. Functional and congenital disorders are not included in this classification.

TOXIC HEART may result from a toxæmia following an acute infection such as scarlet fever or diphtheria.

THE RHEUMATIC HEART is most frequently found among young adults. If a rheumatic history is not elicited, one should suspect the possibility of a luetic heart.

Case History.—A boy, aged 15, gives a history of repeated tonsillitis, painful joints, slight œdema of the ankles, and palpitation. On physical examination he shows evidences of arthritis, normal pulse rate, apex beat only slightly displaced and the heart sounds fairly normal. Following exercise and turning on his left side he shows evidences of an irritable heart, an increased pulse rate, a snapping first sound and a suspicion of a diastolic murmur.

A rheumatic infection is a generalized one wherein the heart suffers as a part of this general reaction. It is also an exudative and proliferative process, as evidenced by the resultant swelling of the joints, subcutaneous nodes and Aschoff bodies in the myocardium, the cells of which closely resemble the Dorothy Reed cells of Hodgkin's disease. In such a patient it is well to search for mitral stenosis, the most common lesion. Mitral regurgitation in pure form is rare, but more often is associated with stenosis. In stenosis the mechanical factor, resulting from a narrowed valve, is not particularly important; but it should be remembered that if disease exists sufficient to produce narrowing of the valves, the myocardium must then be severely affected. A valuable early finding is a diastolic murmur, which is not of aortic origin, and is heard best in the apex area. This murmur is produced during ventricular diastole when blood is sucked through the narrowed atrio-ventricular orifice. The presystolic murmur next heard is caused by the auricular contraction forcing blood through a stenosed orifice. A snapping accentuated first heart sound makes one suspicious of a diseased valve. There may be little stenosis now; but the pathological changes present will undoubtedly lead to it later. The cardinal points in diagnosis of the rheumatic heart are a thrill, a presystolic murmur, an accentuated first sound and a history of rheumatic fever. An unexplained auricular fibrillation in a young adult is usually sufficient evidence upon which to base a diagnosis of early mitral stenosis. The physical signs, pointing to the condition, may be present only after exercise.

*Presented at meeting of O. M. A., District No. 1, at London, November 5th, 1930.

Case History.—A female, aged 22, gives a history of rheumatic fever and chorea, followed in 1929 by diphtheria. The recovery from diphtheria was uneventful but later she developed dyspnoea, decompensation, pericarditis, auricular fibrillation and a generalized oedema. This might be called a "full-blown" case. Now the patient is improved as a result of hospital treatment. Physical examination shows a diffuse apex beat, a definite thrill and sounds typical of stenosis.

This is the type of case too frequently seen which could have been prevented by early diagnosis and proper treatment of the lesion.

THE BACTERIAL HEART follows an attack of subacute bacterial endocarditis.

THE HYPERTHYROID HEART.—*Case History.*—A middle-aged male presents a lid-lag, tremor, tachycardia, fibrillation, and cardiac enlargement without any murmurs. There is no apparent endocarditis, but rather a myocardial involvement here. The cardiac hypertrophy usually means that areas of inflammation or necrosis are present which may be due to the toxin associated with the hyperthyroidism. In these cases myocarditis eventually occurs in the absence of treatment to control the cause of heart strain. While under treatment for mild thyrotoxicosis heart symptoms developed in this instance. Tachycardia may have caused the hypertrophy. This patient was subjected to a bilateral ligation of the thyroid with considerable improvement. When thyrotoxicosis reappeared, a lobectomy was performed, which was followed by both cessation of the tremor and a reduction of the basal metabolic rate, making the patient feel "like a new man." After a period of remission, the patient again shows symptoms of disease, with an increase of the basal metabolic rate varying between plus 18 and 30 percent., and a pulse rate of 92 per minute. If Lugol's solution proves insufficient, a further lobectomy will be necessary.

Case History.—A male, aged 46, gives a history of a war psychosis associated with loss of his voice shortly after arrival in France. His previous history is unimportant. The onset of the disease was sudden with dyspnoea, palpitation, and a basal metabolic rate of plus 40 percent. This represents a border-line case between a thyrotoxicosis and a neurosis. An increased basal metabolic rate will help to differentiate where tachycardia and tremor may be misleading. It is important to locate both borders of the heart and show that it is not displaced. Then if an enlargement is present, a myocarditis exists. This patient shows a hypertension and an auricular fibrillation which was severe, persistent and intractable in its response to digitalis therapy but without decompensation. To steady the heart's action quinidine was employed with the occasional use of Lugol's solution. This treatment was followed by the desirable effect. If these patients respond favorably to Lugol's solution, they are diagnosed as having hyperthyroidism. Digitalis should be used in cases showing fibrillation and decompensation, but quinidine is valuable when they are not decompensated but show a persistent arrhythmia.

THE HYPERTENSIVE HEART is exhibited by those patients with a so-called essential hypertension who have a persistent elevation of blood pressure without any evident cause. The results of a persistent hypertension may be cardiac hypertrophy, arteriosclerosis, and arteriolar or capillary fibrosis. The cerebral, renal or coronary vessels are usually involved, and, depending on which group is most seriously affected, the resulting clinical picture is likely to be the apoplexus, chronic nephritis (arteriosclerotic or azotæmic), or occlusion of the coronary artery.

Case History.—A middle-aged female gives a history of dizziness, hot flushes and precordial pain. Physical examination shows that she is nervous and apparently incapacitated. She reveals evidence of arteriosclerosis and the heart sounds are irregular and ringing, with an accentuated second sound. No cerebrovascular symptoms are present. Two years ago she was diagnosed as a case of hypertension and cardiac hypertrophy.

Thrombosis of the coronary artery and angina pectoris may be differentiated. In true angina the pain is usually of short duration and appears following exertion. In coronary infarction the pain may last several days with fever, leukocytosis, and occasionally abdominal and gastric symptoms (the so-called acute indigestion). Recurrent causeless dyspnoea, unassociated with other symptoms, is a valuable symptom of thrombosis of the coronary artery.

Case History.—A male, aged 67, gives a history of indigestion, attacks of weakness and dizziness with semi-consciousness. He shows evidences of hypertension and arteriosclerosis. The pulse rate is 20 per minute. Now he has frequent periods of confusion and short lapses of consciousness. No pulse deficit is present but there are many more pulsations in the neck than are present at the apex or in the radial artery. This means that there is a defect in the transmission of wave impulses from auricle to ventricle. The electrocardiogram indicates a complete heart block, and the ventricles have established a rhythm and rate of their own. This rate is not altered by exercise and limits the patient's activity.

The cause is due to destruction of the bundle of His as a result of sclerosis of the circumflex branch of the right coronary artery following hypertension. This patient has a three-second interval between beats with a pulse rate of 20 per minute, and can lie comfortably in bed. With a 12-second interval the patient would be unconscious, and with an 18-second interval would give a typical Stokes-Adams syndrome with convulsive seizures.

THE SENESCENT HEART is frequently seen. This is the type of case where the heart and vascular system, out of proportion to the other organs, show the result of the wear and tear of life due purely to age, and fail to efficiently supply the needs of the patient.

The Modern Management of Malignancy

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MALIGNANCY in its various forms has, since the memory of man, been one of the most fatal and widespread of the diseases which attack the human race. For many years, tuberculosis, formerly called the "White Plague," was the most common cause of death; but, through ceaseless research and concerted effort on the part of the various branches of science, this disease has had at last to take second place to the scourge of which we now have an immensely greater dread, namely cancer.

Not many years ago, all types of malignancy were looked upon as fatal, and little or nothing was attempted in order to overcome them. However, the great success which has attended the attempts to control tuberculosis has provided an additional impetus toward the discovery of a remedy for malignant disease.

Surgery, the actual cautery and arsenic paste, have been tried. While the others have been practically abandoned, surgery has proven successful to a limited degree, and still remains probably the outstanding curative measure in the treatment of this condition. But in recent years other means have been found, notably radium, fulgarization, and deep X-ray therapy. Some have claimed results from various sera, but today these are not acceptable to the medical profession.

Patients with malignant disease, particularly those which had advanced beyond the primary stages, were formerly relegated to one of the remotest wards of the hospital, there to await the inevitable end. There remained, of course, the consolation that the symptoms might be alleviated by careful nursing, and the means of making the end as comfortable as possible. But, of late, there have been reports that more and more has been accomplished in the nature of cures, that cases which had once been consigned to the back wards were now being placed in the front wards for treatment, sometimes unsuccessfully but frequently with apparent cures. So it came about that in certain countries, particularly France, Cancer Committees were established at the main medical centres, to which patients were referred. Here proper diagnoses were made and all the agencies available to science were used and co-ordinated; and, through co-operation, the greatest advances in the cure of malignant disease have taken place.

In view of these facts, after consultation and investigation, it was recommended by the Advisory Board of Victoria Hospital, in November, 1929, that a Cancer Committee be organized, consisting of the chiefs of the departments of surgery, medicine, pathology, and radiology. All staff patients suffering from malignant disease were to be assigned to this committee, which would investigate the cases with the assistance of the heads of other departments, particularly those to which the case

should ordinarily have been assigned, such as the chiefs of eye, ear, nose and throat, gynecology, urology, and pediatrics. This recommendation was accepted by the Hospital Trust of Victoria Hospital, December 12, 1929. The Cancer Committee, accordingly instituted, closely corresponds to those of France and some of the other European States, and was subjected to only minor modifications in order to meet local conditions.

Before this committee was officially formulated, applications for cases had been made, and on December 13, 1929, the first meeting of this Cancer Committee was held.

The first case was that of Willie B., aged 10.

"November, 1927, swelling on the inside of the left cheek with ulceration. At first this was regarded as due to irritation from a tooth with inflammatory reaction in the cheek. Later it was found that this patient had a definite small movable mass at the same site, which was pressing the mucous membrane against the tooth. This was regarded as a cyst and attempts were made to aspirate it. Later, under local anæsthetic, an attempt was made to enucleate this mass. At the beginning of the operation the mass was perfectly definite and easily palpated. After the incision was made, on attempt to separate the mass, it was found that the whole lesion had disappeared. We thought it was a thin-walled cyst which had broken as the result of the enucleation. Immediate post-operative recovery was good and the patient discharged from the hospital.*

Later this swelling recurred and was excised from time to time. In all, four operations were performed. The microscopic reports varied. Each time a biopsy was done and, clinically, malignancy became more pronounced after each operation because, regardless of the fact that practically complete healing followed each operation, recurrence developed after progressively decreasing intervals. The pathologist at first did not consider the process malignant, but reported endothelioma. X-ray treatments were given with only moderate success. Finally, the clinical course became very rapid, and on December 11, 1929, the growth was reported to be the size of two walnuts. At this date excision was found to be impractical, and there was left a large tumor mass, ulcerating into the mouth, with a large vein coursing over the outside of the cheek. The patient was then quite ill; the tumor bled very easily, and in two days the mass became almost doubled in size.

The Committee having reviewed all the history, finally accepted the etiology as trauma, due to a blow by a baseball, received approximately three years previously. It was obliged to recognize that all procedures employed up to that time had met with only transitory success, that ultimate failure threatened, and that the tumor was becoming more malignant with each recurrence following interference. The decision was accordingly made that the case be referred to the radiologist and that fulgarization and radium be used.

*From Secretary's Notes on Conference.

That same afternoon gas oxygen was administered; the whole tumor mass and margins were thoroughly fulgarized, and six needles of twelve-and-a-half mg. of radium were imbedded in and about the base of the tumor. These were left in place five hours, and the whole area was packed with gauze for forty-eight hours. This was on December 12, 1929.

"December 16, 1929: There is considerable shrinking of the growth within the mouth. General condition improved.

"January 6, 1930: General condition improved. He is up and about. Cavity is decidedly lessened in size and there is considerable granulation tissue.

"February 10, 1930: The mouth condition is strikingly improved. There is no sign of any protruding tumor. The cavity is completely healed and has firm scar tissue. His general condition is excellent. He is fit to be discharged.¹

The patient has reported to us from time to time at regular intervals, and now, after almost one year, there has been no recurrence.

¹Hospital notes.

*Quotation from Secretary's notes on conference.

Edward Jenner (b1749—d1823)



Jenner Vaccinating His Own Son.
Marble Statue at Geneva.

Ulsus Serpens Following Variola

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BARBARA C., aged five, during convalescence from an attack of variola, developed eye symptoms. On admission to the hospital it was found that she had a large sloughing ulcer of the cornea of the right eye, with Decemet's membrane showing as a small bleb in its base. There was a deep but much smaller ulcer on the central part of the cornea of the left eye. The lids were also much swollen and there was considerable blepharospasm, photophobia and lachrymation.

The patient was kept in bed in a room with plenty of ventilation. Boric acid flushing every two hours was ordered, and hot moist compresses, changed frequently, were applied to the lids for fifteen minutes every two hours. A solution of one-half percent atropin was dropped into both eyes every two hours, and a five percent solution of dionin dropped into both eyes every five minutes for six times night and morning. A pressure bandage was applied, to be changed every two hours. A purgative was ordered, also five drops of the syrup of the iodide of iron in half a glass of water three times a day after meals. Her diet was somewhat restricted, sweets and pastries especially being prohibited.

Next day the ulcer on the right cornea seemed worse. I cocanized the eye with a platinum point, heated in the flame of a spirit lamp, thoroughly cauterized the margins of the ulcer. I then perforated the floor into the anterior chamber and immediately applied a pressure bandage. As the pupil had not dilated I changed the order for atropin to a drop every five minutes for six instillations night and morning.

The eye now began to improve. The iris of course became adherent to the site of the perforation (causing a leucoma adherens), the anterior chamber reformed, the pupil dilated and the infiltration of the cornea began to clear. There is now no infiltration of the cornea. There are, of course, scars (leucoma) but these, especially on the left eye, do not cover much of the pupil. The patient is able to open her eyes a little and play with her dolls, and her sight seems fairly good. To help stimulate regeneration, she is now having one percent yellow oxide of mercury ointment rubbed into both eyes night and morning.

DISCUSSION

This is the first case of ulcer of the cornea following variola that I have seen in my practice. It is interesting because in Europe, prior to the introduction of vaccination, thirty percent of all the blind lost their eyesight from smallpox. Vaccination reduced this in France to seven percent, in Prussia to two percent. Although there are no statistics available in Canada, it must be very low here.

Corneal diseases form a large percentage (25 to 33) of ophthalmic affections. Primary corneal infections cause one percent and primary

and secondary corneal infections cause 27 percent of all cases of blindness, hence the great importance to the general practitioner of corneal injuries and diseases.

During the eruption of smallpox, the lids are much swollen and hence are not opened by the patient, and even the physician neglects to look at the eyes from time to time. In that case, when the swelling of the lids goes down and the patient opens his eyes again, the morbid process in the cornea is already in progress and we are just so much behindhand in undertaking the treatment. Hence every physician treating a case of smallpox should prevent the agglutination of the lids by applying petrolatum or yellow oxide of mercury ointment, should examine the eyes at every visit, and should cleanse or order the conjunctival sac to be kept cleansed with antiseptic solutions. Careful watching will enable him to recognize the very commencement of the corneal disease, which in these early stages presents the most favorable conditions for treatment. Since keratitis in smallpox does not develop until late in the disease, long after the stage of eruption, it obviously cannot be regarded as a smallpox pustule that has been localized on the cornea. Such pustules do occur, but only on the conjunctiva. It is true they may then, if they lie near the margin of the cornea, give rise to a suppurative infiltration of the adjoining portions of the latter, but not to the typical picture of the centrally situated *ulsus serpens*, or creeping ulcer of the cornea. When the latter develops in the stage of desiccation of variola, it must be attributed, like a traumatic *ulsus serpens*, to an infection of the cornea from without. There is no lack of opportunity for such infection to take place, since the free border of the lids is a favorite seat for variolous pustules, which can thus come in direct contact with the cornea. The infection could not be due to the germ causing smallpox for it occurs at a time when immunity against smallpox has already been effected.

Ulsus serpens is the type met with in variola. This form of ulcer begins as a rounded spot of yellowish or greyish white color, usually occupying the central part of the cornea. Its tendency is to spread peripherally. A violent iritis and the early appearance of hypopyon attest the severity of the pathologic process. Pain, photophobia, circumcorneal injection, and slight oedema of the lids are present in most cases. If the process is unchecked, great sloughing occurs with corneal perforation and vision is correspondingly reduced or entirely lost. When the perforation occurs, the hypopyon and aqueous humor are evacuated and the iris prolapses. In favorable cases perforation is followed by a scar; in unfavorable ones panophthalmitis develops and the eye ends in phthisis bulbi.

TREATMENT

In consideration of the rapid progress which an *ulsus serpens* usually makes, and which threatens the entire cornea with destruction, a particularly prompt and energetic interference is required. The first thing to do is to disinfect the conjunctival sac as thoroughly as possible.

For this purpose we may use a considerable quantity of a mild anti-septic solution which should be as hot as can be borne comfortably. It acts principally by washing away secretions and necrotic material which carry with them many of the organisms and their toxins. It is impossible to employ antiseptics sufficiently strong to kill the organisms, hence it is of little importance whether a weak bichloride of mercury solution ($\frac{1}{8000}$) or simple boric solution is used. With this we should apply the remedies ordinarily used in corneal ulcers, viz., atropine, hot, moist compresses, sometimes a bandage and dionin.

Atropine, in one percent solution in adults, and one-half percent solution in children, should be instilled three times a day or oftener if necessary, to keep the pupil well dilated. It is valuable by reason of its effect on the accommodation and the blood vessels, and also prevents iritic adhesions.

Moist Heat. The application of hot moist compresses (120° F.) favors the separation of necrotic from living tissue, promotes the necessary development of new blood vessels in the cornea, and relieves pain. They should be applied for 15 minutes every two hours.

Bandage. As a rule the use of a bandage should be prohibited. It should never be employed where secretion is profuse, since under these circumstances it becomes moistened and hot, and acts as a poultice. The chief arguments in favor of a protective bandage are that it keeps dust from the eye and prevents movements of the globe. In order to immobilize the affected eye, however, it will be necessary to bandage both eyes. Poultices, which are popular with the laity, have no place in modern ophthalmology. They are not only useless but often positively harmful. Smoked glasses should be used to protect the eyes from the light.

Dionin acts as a lymphagogue, is an analgesic, and stimulates corneal regeneration. The strength of the solution may vary from one to ten percent. I often use a five percent solution instilled every five minutes for six instillations, two or three times a day.

As soon as the margin of the ulcer shows a purulent infiltration, we must proceed without delay to attack the corneal infection directly. The cornea should be cocainized, then with a sharp spoon the ulcer is thoroughly curetted, removing all the sloughed material. Silver nitrate (20 grains to the ounce), trichloroacetic acid, tincture iodine, carbolic acid or absolute alcohol should then be directly applied, care being taken that no excess runs over on to the cornea or conjunctiva. If the ulcer continues to spread, the thermophore, heated to 155° F. to 160° F., should be applied directly to the ulcer for one minute. If, in spite of such treatment, the ulcer keeps creeping across the face of the cornea, or passes inward through its layers, the actual cautery—possibly the best method of all—should be tried. This is applied to the infiltrated edge of the ulcer, including a little of the sound cornea adjoining. If the hypopyon is large and the ulceration deep, so that there is danger

of an early perforation of Decemet's membrane, it is well to perforate the cornea by applying the point of the cautery to the floor of the ulcer and evacuate the anterior chamber. This reduces tension, starts a flow of lymph into the cornea from its nutrient vessels, and promotes repair. A pressure bandage should be immediately applied and changed frequently.

OTHER METHODS OF TREATING CORNEAL ULCERS

Radium. In cases of hypopyon ulcers, Lawson and Davidson have reported remarkable improvement from the use of radium. From 25 to 29 milligrammes were used, the exposures lasting five minutes. Serum and Vaccine Treatment. Rohmer of Nancy has used autoserotherapy in *ulsus serpens* with good results. Anti-diphtheritic serum also has been used with apparent benefit, also milk and other foreign proteins. Optochin (ethyl hydrocuprein). In using this agent only fresh solutions should be employed. A one percent aqueous solution may be applied directly to the ulcer and repeated two or three times a day. Subconjunctival injections of physiological salt solution, bichloride of mercury ($\frac{1}{2000}$ or cyanid of mercury $\frac{1}{4000}$) have been strongly recommended. Paracentesis. When the ulcer is progressing and especially if the tension is raised paracentesis is often very beneficial. Guthrie or Saemisch operation. After all previous methods have failed and most of the cornea has become involved in the ulcerative process, although there may be little chance of sight, the eyeball may still be saved by making a bold incision, with a cataract knife, through the base of the ulcer from one side of the cornea to the other.

GENERAL TREATMENT

Cathartics may be given to secure a daily evacuation. Quinine, iron, strychnine and alcohol may be required in debilitated subjects. Associated local diseases of the conjunctiva, lachrymal passages, nose and throat, or of the teeth, should receive immediate and appropriate attention.

The complication most to be dreaded is perforation with prolapse of the iris. If seen early, under a general anæsthetic, the iris should be excised close to the cornea, the pillars stroked back, a strip of conjunctiva tucked into the wound or a conjunctival flap made, and a pressure bandage applied. If the scar covers the pupil and there is clear cornea, especially below, an optical iridectomy is very useful.

In favorable cases the destroyed portion of the cornea will be cast off, the infiltration of the cornea will clear, blood vessels—the so-called salmon patches—will appear, scar tissue replaces the destroyed portions of the cornea and usually fills the gap exactly so that the surface of the cornea is level. If Bowman's membrane has been destroyed, the opacity is permanent, but even then it tends to clear more or less. The younger the patient the more clearing may be anticipated. Dionin and yellow oxide of mercury ointment (one or two percent) are a distinct aid in the regeneration of the cornea.

Declaration of Geneva

Accepted by men and women of all nations, regardless of all considerations of race, nationality or creed, as their duty:

I.—The Child must be given the means requisite for its normal development, both materially and spiritually.

II.—The Child that is hungry must be fed, the child that is sick must be nursed, the child that is backward must be helped, the delinquent child must be reclaimed, and the orphan and the waif must be sheltered and succoured.

III.—The Child must be the first to receive relief in times of distress.

IV.—The Child must be put in a position to earn a livelihood, and must be protected against every form of exploitation.

V.—The Child must be brought up in the consciousness that its talents must be devoted to the service of its fellowmen.

War Memorial Children's Hospital of Western Ontario

—along those lines upon which such an Institution functions, is fulfilling the requirements of this Declaration with outstanding success—

—giving the means requisite for a normal development—

—nursing the child that is sick—

—by building health and soundness of body, laying the foundation for putting the child in a position to earn a livelihood—

—in the elementary schooling it provides, creating a first consciousness of service to fellowmen.

“Keep On Keeping On”

ETHEL TEASDALL

*War Memorial Children's Hospital
London, Canada*

AFTER long months of combined effort on the part of various women's organizations of Western Ontario, the War Memorial Children's Hospital at London opened its doors. Every member of these energetic clubs was vibrant with enthusiasm for this worthy object. It was unanimously agreed that a more suitable War Memorial could not be established than a living, working epitaph to the "glorious dead, who never die." All the energy of war-time work was applied to build a healing reminder of the ravages of war. To create, rather than to destroy, and to heal rather than to maim, were the ambitions of those who labored. The wave of interest was reflected in many homes. I well remember bright-eyed little Bill, who was doing his best to keep up with the rest of the fellows in a game, in spite of one leg being much thinner and shorter than its mate. "Just you wait till that new Children's Hospital is ready, then I'm going to get fixed up." Then Bill's great day arrived, and he truly did "get fixed up" in that same, gamey spirit.

Now, we who are privileged to work in this splendid Hospital of Western Ontario ask that this *first* interest be sustained, for the Hospital is yours—to serve the needs of this part of the province. To have provided a splendidly modern building, well stocked linen cupboards, well managed kitchens, scientific hospital equipment, a conscientious staff of nurses and highly specialized staff of doctors was no mean achievement, and the medical profession and the public at large have cause to be grateful to the Hospital Committee and its many branches of workers for their unselfish toil. Into the hands of the followers of Hippocrates, the torch of the red poppy fields of Flanders was given. May they hold it high, that some of these handicapped, less privileged ones may walk in its light! May they maintain this *prime* interest in the Hospital, for it is worthy of their support!

When the Hospital was ready for its first patients—with the little beds so neat and white—and the wards so quiet—there appeared to be the end of all labour, but in the Hospital story it was but the beginning. Sick, restless babies found the white bassinets to be nests of comfort, and gave up fussing to do some real "honest-to-goodness" growing under wise and careful supervision. Toddlers with various ailments filled the white cots, and children, like the Bill who was waiting to be made well, discovered the beds to be just stepping stones of the roadway to health. The coverlets of the beds weren't so straight, when the restless little feet with a great desire to run rather than to rest were under them. The wards were not so peacefully still, for even though a lively little

piece of humanity can't walk there may be no reason why he can't shout. Some uncomfortable splints made good hammers to take the new white enamel off the beds. Toys were thrown about, and even picture books, which were alluring at first, failed to satisfy. There was nothing else to do, you see. The nurses, though most kind and willing, were all too busy to spend all the time required to provide occupation for these little patients. Bad habits were in danger of being formed. Children who had been to school had, through physical disability, lost their place in their regular grade, and more than that, their interest in school studies. As well as hospital care, good food, proper treatment, rest and sunshine, these children needed "something to do," or, in medical parlance, occupational therapy—the tonic treatment of handiwork. To find happiness in work is no mean ambition. Herbert Spencer, in his "Education" says, "The truth is that Happiness is the most powerful of tonics."

Consequently, in 1924, the hospital school was inaugurated with a full time teacher, supplied by the London Board of Education; and the school was established under the Ontario Auxiliary Class Act to provide education for physically disabled children and to give them as many of the amenities and advantages of ordinary school life as possible. To the normal child, education is a priceless gift, but to the little cripple it means life itself. There seems to be a definite medical value in a hospital school. It makes periods of rest and exercise easy to regulate and keeps the child busy, interested and happy; it shortens a long, tiresome day; it forms a link with the activities of a normal child, and helps in the establishment of normal life, when the child patient leaves the hospital.

There is an air of happiness pervading the sunny wards of this hospital for children. You see, we're "all in the same boat" as it were—and that in itself makes for contentment and social equality. To be the only lame one in a group and not able to join in all the fun is most disturbing; but here most of us have to wear braces, or splints, or go about in wheel chairs if at all, so that makes for co-operative friendliness. No sense of inferiority or difference is developed. This overcomes the feeling of resentment which these handicapped ones are likely to feel towards society in later life. To furnish a brace or to put a child into a cast does not straighten out his mind as well as his legs. These emotional and social handicaps are often quite as serious as the physical defects which cause them.

Then, too, we concentrate on what faculties and senses we have left, not on what we have lost; the abilities, rather than disabilities, are emphasized. In school studies, we try to start in where the regular school classes had to stop, and in spite of many interruptions for necessary treatments, some progress is made in academic studies. There are, however, lessons of patience, bravery and pluck, subjects not named on the ordinary school curriculum, learned and practised every day by some of these small patients. The old school books take on a new light, and

sometimes it's real fun to do lessons in bed. Then for the person who is able to sit up, there's a typewriter to help stiff fingers to move more freely, as well as a new way to learn dull spelling. Scrap books, light enough for frail arms to hold, with brightly colored pictures, are plentiful. Books for boys and girls who are learning to read are there; and there are blocks to play with and many castles to be built. A sunny roof serves as a playground every day of the year; and even the bed patients are not deprived of its benefits. The little girls sew and knit, and sometimes the boys give a helping hand along these lines. Last year fifty dollars was realized at the annual sale of children's work. This money was used to furnish more working material for these busy hands. By all this, we do not mean that the hospital school is a great panacea for all evils, but rather just one department of the hospital to aid in the business of "getting better."

Most of these children are able, through the kind agencies of the War Memorial Children's Hospital, to take their first step toward the making of useful citizens, instead of being compelled to sit in darkened places to watch the rest of the world go by. Each day, they seem to be living the motto of the Society for Crippled Children—"Keep on keeping on." So, with these child patients leading and showing us the way, let us stand behind them, with enthusiasm, interest and support.



The Roof Playground

Recent Therapy in Lobar Pneumonia

CARL G. MORLOCK, '32

IN spite of the fact that in 1886 the pneumococcus was isolated, little advance has been made in the prevention and treatment of lobar pneumonia, comparable to that in other specific infections such as typhoid fever, diphtheria, and scarlet fever. This suggests a possible factor peculiar to the pneumococcus.

INHALATION OF CARBON DIOXIDE

Henderson and his co-workers¹ showed that an atelectasis, induced in a portion of lung by blocking a bronchus, reduces the resistance of that part to the pneumococcus. This has been offered as an explanation for the incidence of pneumonia in the new born. At birth the lungs are normally atelectatic and are expanded by the first inspirations; if the infant is weak, the expansion is incomplete and a portion may remain permanently collapsed. Assuming also that post-operative pneumonia owes its inception to a primary atelectasis induced by accumulating bronchial secretions, carbon dioxide in the respired air was administered routinely to a series of new-born infants and patients after anesthesia. This was found to maintain an efficient ventilation of the lungs and to reduce the incidence of pneumonia.

Coryllos and Birnbaum² observed that the first stage of lobar pneumonia consisted essentially in the occlusion of bronchioles and atelectasis. They found that post-operative massive atelectases, post-operative pneumonia and lobar pneumonia had similar pathogenesis, evolution, clinical and roentgenological findings. They induced in dogs a pneumonia of such severity as ordinarily to be fatal, and found that those whose respiration was stimulated by the administration of carbon dioxide had a good chance of recovery. Observations by Henderson and his co-workers¹ on an unselected group of humans with lobar pneumonia showed that those to whom carbon dioxide was administered had a mortality of five percent, whereas a control group had a mortality of thirty-one percent.

These findings may vindicate some support to the atelectatic hypothesis of the etiology of lobar pneumonia and may suggest carbon dioxide as beneficial in its prevention and treatment.

DIGITALIS

An increased pulse rate and circulatory embarrassment are often distressing and alarming accompaniments of lobar pneumonia. To relieve these symptoms digitalis has been much used and, following the observations of Cohn and Jamieson,³ who demonstrated that this drug produced the same electrocardiographic changes in pneumonia and normal hearts, it became a routine therapeutic measure. There has been some doubt of the efficacy of the drug in reducing mortality, and

the recent work of Wychoff and Niles⁴ indicates that such routine administration is dangerous. Observations on 835 unselected cases were made over a period of two years. Each digitalised patient was checked by a control, and it was found that the incidence of death in the former group was from two percent. to thirty-five percent. greater than in the latter group, irrespective of age, sex, pneumococcal type, septic or cardiac complications.

POTASSIUM PERMANGANATE

Chester⁵ observed favourable results from the use of this drug. It was administered as a retention enema using two grains in one and one-half pints of water. Lowering of temperature, lowering of pulse and respiratory rates, and assistance to expectoration were noted twenty-four to forty-eight hours after the enema. One individual of middle age, found in a moribund condition, and whose illness was later shown to be complicated by a tuberculous process, was treated in this way. He was promptly relieved and ultimately made a good recovery. Patients with low resistance, picked at random from a hospital crowded with the derelicts of a large city, were treated with potassium permanganate, and showed a fifty percent. mortality, whereas controls cared for by the ordinary therapeutic means were almost 100 percent. fatal.

SUBCUTANEOUS OXYGEN

Attempting to supplement the respired oxygen in patients suffering from an anoxemia, Montford⁶ found that 100 c.c. of oxygen could be injected subcutaneously without discomfort, that several hours after the injection the pulse rate and temperature were lowered, dyspnoea was relieved, and if cyanosis was present, the color was improved. In no case did such therapy have a beneficial influence on the mortality rate; the desirable effects were transitory and latent pathological lesions were roused to activity, which in the face of an associated tuberculous lesion seriously complicated the picture.

PITUITRIN

For some time it has been noticed that in lobar pneumonia a fall in blood pressure is synchronous with fall in temperature, rise in pulse rate, and a grave prognosis. On the hypothesis that by keeping the blood pressure elevated the concomitant symptoms and death could be averted, Moorehead⁷ treated a small series of patients in extremis with a sufficient dose of pituitrin to maintain the arterial pressure, and so assisted them to the crisis, and eventually to recovery. Although this result requires further investigation, it suggests a possible therapeutic aid promising an improved prognosis.

SUMMARY

1. Inhalation of carbon dioxide appeared to prevent atelectasis and to assist in preventing and overcoming a pneumococcal infection.
2. Digitalis was used in a study of 835 cases of lobar pneumonia and was found to increase the mortality rate consistently.

3. Potassium permanganate in a short series of decidedly unfavourable cases has given favourable results.

4. Subcutaneous oxygen did not reduce the mortality rate and has little justification for its use.

5. Arterial tension maintained by a drug such as pituitrin seemed to assist the patient to his crisis.

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A Case of Cretinism

C. S. SANBORN, M.D.

Windsor, Ontario.

EXAMINATION of the history of B. R., a female, aged nine and a half years, revealed that the child had been treated since early infancy for the following conditions: obstinate constipation, delay in walking, bed-wetting, rheumatism, dry skin and intolerance of cold, delay in closing of fontanelle (age four and a half years), delayed dentition (first tooth at eleven months), and general retardation of mental and physical development.



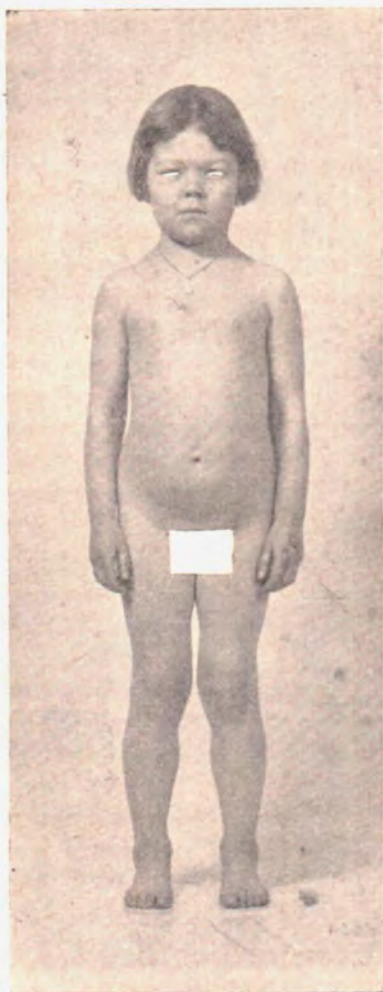
There was a very apparent failure of growth, the child's body length being forty-four and a quarter inches, which was seven and a half inches less than that of her sister, more than a year younger. She was thus approximately ten inches below the height normal for her age.

She was tidy and quite docile. Further, one was impressed with an apparent attitude of self satisfaction and with an obviously manifested indifference to environment.

The child's hair was dry and coarse, her face pale and expressionless, and there was a marked puffiness of the features, especially about the nostrile, bridge of nose, and eyelids. She had only four permanent teeth, and all remaining deciduous teeth appeared well preserved. The tonsils showed hypertrophy and faucial pillars, moderate injection. The tongue was not excessively thick, nor was the thyroid gland palpable.

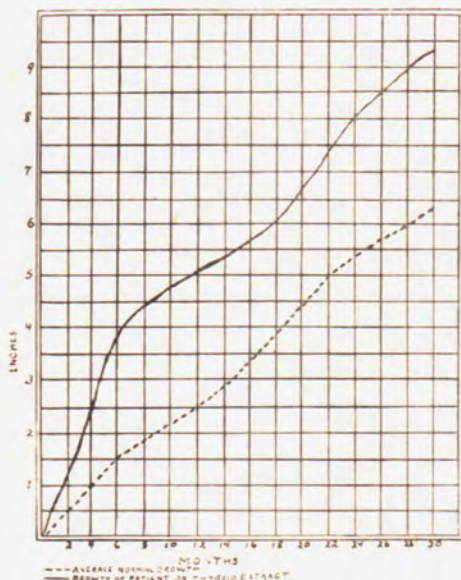
¹This refers, no doubt, to the stiffness of the limbs peculiar to infantile myxodema.

The chest showed no abnormality beyond an unusual plumpness of the shoulders. The abdomen was large and protuberant, the circumference measuring twenty-four inches. There was a marked lordosis. A certain stiffness or awkwardness characterized movements of the limbs, and an abnormal deliberateness and slowness obtained in every action.



Thyroid extract was administered with spectacular results. Improvement in mental capacity and concentration was early and marked. Within a week a change of attitude to her environment was pronounced. She smiled frequently, developed a sparkle in her eyes, and became quite busy and inquisitive. Progress continued and in three months the child added one and a half inches to her stature, meanwhile losing a pound in weight. Her appetite improved and her bowel action became normal. The abdominal circumference was decreased by three inches

and the lordosis became less pronounced. She became no longer sensitive to the cold and would not tolerate underclothing. Her mental improvement was recorded in her school report, which showed her grades to be "excellent" and "1st class." She took her place in the activities of school and play on an equal footing with the other children.



In six months after the commencement of thyroid therapy an increase in height of two and three-quarters inches was measured. She lost six deciduous teeth, which were quickly replaced by permanent ones. The child at no time appeared "toothless." A month or so later, at the age of approximately ten years, her second dentition was complete. At the end of a year, the child had grown four inches, in two and a half years, nine and a quarter inches. Mental and physical improvement were progressive.

A Case Report of Complete Inversion of the Uterus in a Primipara

C. F. SULLIVAN, '31

THE following case report is presented because of the rare occurrence of complete uterine inversion in a primipara.

The patient was a well developed, muscular woman of thirty-one, whose past history was negative except for mumps and measles in childhood. Menstruation was regular and was of the twenty-eight day type.

Her last menstrual period began October 17th, 1929. Quickening was determined on February 24th, 1930, and the date of confinement estimated as July 24th, 1930. When she was admitted to hospital on July 1st, she had been in labour for three hours. Her condition was good with pains coming every three minutes and lasting about one minute. Temperature, pulse and respirations were normal. Some bloody discharge was noted. Presentation was L. O. A. with the head firmly fixed. Urinalysis showed albumin, pus cells, and an occasional red blood cell.

Two hours after admission, or five hours after the onset of labour, the membranes ruptured spontaneously. The uterine contractions were then coming every two minutes and were much more severe. One and one-half hours later the patient delivered herself of a female child weighing seven pounds two ounces. There was a first degree laceration which was repaired with chromic catgut. The placenta and membranes were expelled intact one-half hour later by the Crede method. The fundus appeared to be well contracted but, because of some bleeding, one c.c. of pituitary extract was given hypodermically.

One hour later the patient was removed from the labour room, and fifteen minutes after her pulse was 120 and small, and her lips very pale. There was no free vaginal bleeding, but clots were expelled at intervals. An interstitial saline of 1,000 c.c. along with an intravenous saline of 750 c.c. were administered with no improvement in the pulse. The foot of the bed was elevated, heat applied externally, and massage of the fundus was continued.

The condition of the patient showed no improvement and three hours after delivery the pulse was barely perceptible. Clots were still being expelled from the vagina. Finally the vagina was tightly packed with iodoform gauze. The patient was then semi-comatose, but aroused herself at intervals to complain of severe epigastric pain. The extremities were cold and there was a profuse cold perspiration with slight dyspnoea. A direct blood transfusion of 500 c.c. was given without any improvement. Four hours after delivery the patient expired.

Permission for an autopsy was not obtained. Vaginal examination after death revealed the completely inverted, well contracted uterus.

On abdominal palpation above the symphysis a mass about the size of an orange was defined. It was suggested that this was the incompletely inverted cervix, now four layers thick, which had been mistaken for the contracted fundus from delivery until death.

COMMENT

Inversion of the uterus is undoubtedly one of the rarest complications of labour. Eden states that it is only met in 1 in 180,000 to 1 in 200,000 labours. Braun of Dublin, according to De Lee, does not record a single case of inversion of the uterus in 250,000 cases.

The exact etiology is in doubt. The more common theories are that it may occur spontaneously due to atony of the wall of the fundus, or that it may be induced by traction on the cord, or excessive pressure on the fundus during the third stage of labour.

SUMMARY

The following appear to be the principal features of the case:

1. The rarity of the condition, especially in healthy, muscular primipara.
2. The rapidity of the labour (six and three-quarters hours) in a primipara.
3. The use of Crede's method.
4. The incompletely inverted cervix mistaken for the fundus of the uterus.

THE MODIFICATION OF POWDERED MILKS GOVERNED BY THE SAME RULES AS COW'S MILK

When physicians are confronted with undependable fresh milk supplies in feeding infants, it is well to consider the use of reliable powdered whole milks such as Mead's or the well-known Klim brand. Such milk is safe, of standard composition, and is easily reliquefied.

Under these conditions, Dextri-Maltose is the physician's carbohydrate of choice just as it is when fresh cow's milk is employed.

The best method to follow is first to restore the powdered milk in the proportion of one ounce of milk to seven ounces of water, and then to proceed building up the formula as usual.—*Adv.*

Some Chronic Pulmonary Diseases

W. C. SHARPE, M.B.

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IN the consideration of chronic pulmonary diseases I prefer to think of them as those due to tuberculosis and those of non-tuberculous origin. And, as tuberculosis constitutes such a high percentage of these cases presented for diagnosis, the possibility of this disease should be made the chief objective of a thorough chest examination. By such a procedure, fewer early tuberculous lesions would pass undiagnosed and more individuals would be treated at a time when the probability of recovery would be considerably better.

In reviewing the histories of individuals suffering from tuberculosis, we find many that have been previously labelled bronchitis or bronchiectasis and allowed to continue their routine of living until the tuberculous lesion has reached an advanced stage. Several bottles of cough medicine have been taken before the true nature of the cough was determined. We learn of individuals expectorating for a considerable period before a sample of sputum is sent to the laboratory. An hæmoptysis has frequently been left unexplained when we know that such an occurrence should immediately demand a thorough search for a possible tuberculous lesion in the chest.

Failure to make a correct diagnosis of chronic pulmonary diseases is usually due to incomplete investigation. Symptoms of chronic cough, expectoration, shortness of breath, pain in the chest, or blood spitting warrant a thorough chest examination. In such an investigation, a careful evaluation of a properly taken history cannot be emphasized too much, and considerable time taken in questioning the patient is time well spent. Only after all the data of the history have been considered, should the patient be submitted to the physical examination. The sputum should be examined in all cases and, where doubt exists, an X-ray of the chest should be recommended. In many cases, after studying the history, the examiner is able to render an opinion which is usually fairly accurate by the time he has finished his physical examination and the radiographic picture and sputum report will help in strengthening that opinion.

Mr. D. N., age 53, farmer, seen April 12, 1930. Complaints—persistent cough, expectoration, increasing dyspnœa, and loss of weight. F. H. of no significance—no knowledge of tuberculosis. P. H.—measles, mumps, and whooping-cough in childhood; pleurisy in right axillary region, 1918, in bed two weeks; tonsillitis, 1925. P. I.—He has had a cough and expectoration for three and a half years. He has frequently felt pain in right shoulder and in upper part of right chest. A diagnosis of bronchitis was made two years ago. Medicine was given to control the cough. Sputum was not examined. He remained in good general condition and worked

continually on his farm until January, 1929, when loss of energy forced him to do lighter work. In March, 1930, he had become quite short of breath, was quite weak, felt feverish, and was losing weight rapidly, so decided to have a thorough chest investigation. Examination—temperature is 100.4, pulse rate 108, weight 130 lb., 30 lb. less than the previous autumn. Chest—There is flattening over upper regions of both sides of chest, general expansion is poor with lagging on the right. Lungs—right; there is impaired resonance over upper half, front and back; broncho-vesicular breathing over upper two-thirds front and back; numerous medium moist rales over the same regions. Left—there is impaired resonance over upper third, front and back; bronchial breathing with numerous medium and coarse moist rales over apex and down to second interspace anteriorly and as low as fifth thoracic vertebra posteriorly. Sputum contains many tubercle bacilli. X-ray picture—right lung: there is a fairly dense parenchymatous infiltration from the apex to the fourth anterior rib. Left lung: there is a dense consolidation and cavity in the apex and first intercostal space and mottling to the fifth anterior rib.

This is the type of case so frequently labelled bronchitis. While the individual's general condition remains fairly good and he is able to work, tuberculosis is not suspected. Only when he begins to lose weight rapidly, becomes weaker and probably has a fever, is the possibility of tuberculosis considered. In the meantime, he keeps expectorating tubercle bacilli which is a continuous menace to his family and the community. An analysis of the above history shows him to have had pleurisy in 1918, and has had frequent pain in right upper chest since. Furthermore, he has been coughing and expectorating for some considerable period. Such a story should have immediately aroused the suspicion of tuberculosis and a thorough investigation made at the time he was treated for bronchitis. When he was diagnosed pulmonary tuberculosis, the lesion had so far advanced that the prognosis was very poor. It will be observed that the physical findings and pathological changes are most prominent in the upper regions of the lungs, which is the usual picture of adult pulmonary tuberculosis.

Mr. J. H., age 54, examined March, 1928. F. H.—negative. P. H.—scarlet fever only illness in childhood. P. I.—He has had frequent colds and more or less constant cough and expectoration the past five years. In March, 1927, he developed pleurisy and was in bed seven weeks. Had considerable sputum at the time. Cough and expectoration have gradually increased since this illness and at present he averages five ounces mucopurulent sputum in twenty-four hours. At times he will feel the sputum rise in the throat and has to hurry with the container. These spells occur about once every two to three days and there are about four ounces of sputum on each occasion. The odor is often quite foul. Four months ago he had another attack of pleurisy in base of left chest with a slight elevation of temperature. He did not go to bed. Dyspnea has

always been present but is considerably worse at present. He has worked as janitor until one month before examination. The only knowledge of fever of which he is aware was when he had the pleurisy. He has lost eight pounds in weight the past two years. There is no history of night sweats or hæmoptysis. Examination—temperature is 98.6, pulse 64, weight 130 lb. General nutrition is moderately good. Lips are cyanosed. There is marked curvature of the finger nails with considerable digital clubbing. Chest—the nutrition is poor with deep supra clavicular fossæ. The general expansion is very limited with less movement of lower left chest. Lungs—right; percussion note is hyper-resonant; breath sounds are feeble throughout with numerous fine moist rales heard over the lower region, and scattered rhonchi over the entire lung field. Left; there is a hyper-resonant note over the upper part of lung with slight impairment over lower half. The expansion of the left diaphragm is considerably less than that of the right. The breath sounds are feeble, and numerous medium moist rales are heard over the lower half of the chest and scattered rhonchi heard over the entire lung field. Sputum is persistently negative to tubercle bacilli in many specimens examined. X-ray—there are slight irregularities of the left dome of the diaphragm with obliteration of sulcus by adhesions. Right lung—there are multiple small thin-walled annular shadows over the greater part of the lung field becoming more pronounced in region of the hilus. Left lung—there are similar very pronounced multiple annular shadows from the third anterior rib to the base. Throughout the fourth intercostal space and medially in the third and fifth interspaces, there is a parenchymatous infiltration in the paravertebral trunks. Films show a characteristic picture of extreme bronchiectasis with a secondary chronic pneumonitis. A diagnosis was made of bronchiectasis and emphysema.

There are a few features of the above history that deserve mention as being suggestive of bronchiectasis: the chronic cough with large amounts of sputum rising up into the throat; the foul odor of the sputum; the early dyspnœa progressively increasing, and the afebrile course are all quite characteristic of this disease. The strength is usually fairly well maintained until a late stage of the condition. On examination, they are usually fairly well nourished. Clubbing of the fingers is a common finding. Signs in the chest may be sparse or may be considerable and are more prominent in the lower regions of the lung. Breath sounds are usually somewhat suppressed. Rales may vary from a few of the fine moist type in the lower part of one lung to numerous rales of every description over a considerable area of each lung field. An associated emphysema is frequently seen. In all these cases, tuberculosis should be ruled out. The persistent negative sputum and lack of parenchymatous changes in the upper region of the lung is usually good evidence of the absence of tuberculosis.

Mr. A. C., age 55, seen June, 1930, occupation—laborer. F. H.—negative. P. H.—typhoid fever, 1895, frequent colds for years. P. I.—he has had a persistent cough for the past fifteen years with considerable expectoration and increasing dyspnoea. He had influenza with pneumonia in 1919. When cough is severe, frequently he feels an ache in chest. During the past year, sputum has been occasionally blood streaked. For the last three years symptoms of cough and dyspnoea have gradually become more disabling and he has been able to work only a few months each year. Recently his strength has not been good. There is no knowledge of fever. Nutrition has been well maintained. Examination—temperature is 98.2, weight is 132 lb., pulse rate is 86. General condition is fairly good. Lips are cyanotic. There is no change in curvature of nails nor digital clubbing. Nothing abnormal is found in cardio vascular system or abdomen. Chest is rather undernourished with prominent clavicles. The sternum is somewhat projecting and the ribs are elevated. There is very little expansion. The percussion note is hyper-resonant throughout both sides. Breath sounds are generally feeble, with slight prolongation of expiration. Numerous rhonchi are heard over both sides of the chest. Sputum is persistently negative to tubercle bacilli. X-ray—the diaphragm is irregular. Other than some calcified nodes in the left hilus area, no abnormal shadows are seen over the lung fields.

This is the usual picture of chronic bronchitis and emphysema. There is a long history of cough, with or without expectoration. Dyspnoea is an early symptom. In the early stages of the condition the individual is usually fairly free of cough during the warmer weather but becomes worse in the cold and damp climate. Later he is uncomfortable throughout the entire year. His general condition and strength are usually fairly good. His temperature is, as a rule, normal. He struggles along with a disability due to the dyspnoea and continual coughing which interferes with his work during the day and his sleep at night. At times the subject has very harassing symptoms with little to be found in the chest. Some evidence of emphysema is usually present, with the chest in an inspiratory position and hyper-resonant on percussion. Breath sounds are commonly rather feeble and slightly prolonged in expiration. Numerous rhonchi are frequently heard scattered over both lung fields.

Mr. H. B., age 42, laborer, examined October 4th, 1930. F. H.—negative. P. H.—no illnesses. For the past six years he has been operating a sand blasting machine. P. I.—about December, 1929, he developed a slight hacking cough, became short of breath, and felt a slight pain in chest. His strength was not so good and he noticed he was losing weight. Sputum was scanty. Early in 1930 his occupation was changed to outdoor work. His symptoms, however, increased, and three weeks ago he had to quit work. In December, 1929, his weight was at its maximum of 130 lb. Present weight is 110 lb. He has no knowledge of having had pleurisy or

hæmoptysis. Examination—Individual is poorly nourished. Temperature is 100. Pulse rate is 94. Nothing abnormal is found in cardio vascular and nervous system or abdomen. Chest—is small and poorly nourished, expansion is poor. Lungs—there is minimal impairment over both apices. A few scattered fine moist rales are elicited over mid lung area on each side of chest. An occasional rhonchus is heard over both lungs. Sputum is persistently negative to tubercle bacilli. X-ray of chest—there is a quite dense mottling of quite uniform distribution throughout both lung fields. Nodules are rather dense and discreet and perhaps increased in density over upper lobes. The shadows are of quite uniform distribution. The first thought is of an occupational disease. A diagnosis of silicosis was made.

This case is cited to demonstrate the importance of recognizing the occupation as a possible cause of the chest lesion. Such a condition as the above is frequently encountered among gold miners, potters, laborers in stone quarries, those working with flint and granite. The symptomatic picture may be confused with an ordinary bronchitis. It is, however, more rapid in development and more disabling. An X-ray of the chest is necessary to make a definite diagnosis. The radiographic picture frequently resembles miliary involvement of the lungs, which occasionally becomes a problem in diagnosis. Frequently a tuberculous condition is associated with silicosis of the lung.

The above are only a few of the commoner cases of chronic pulmonary diseases presenting problems in diagnosis. Such conditions as bronchial asthma, chronic pneumonitis, malignancy, syphilis, lung abscess must be kept in mind as possibilities. An investigation of the chest is not complete, and will not reveal the real nature of the lesion in many cases without a carefully taken history, a conscientious physical examination, a search for tubercle bacilli in sputum when present, and a properly taken radiographic picture of the chest.



Heart Sound Amplifier

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IN cardiac clinics, students frequently experience difficulty in recognizing certain murmurs, and still more difficult is the placing of these sounds in their proper temporal relations with the normal heart sounds. To a large degree, this is due to the fact that the time available for each student is far too short to enable him to fix the events firmly in his mind; also, when the sounds are weak, he is unable to recognize or separate them from other sounds originating outside the heart.

In an attempt to overcome these difficulties, an amplifier using the principle of a thermo-ionic valve (radio tube) was constructed. In the building of the instrument great care has been taken to not only reproduce the sounds much louder but also to preserve their quality by avoiding any distortion by the amplifier itself.

The instrument, with some exceptions, is similar to that used in public address systems, and includes a microphone which transforms the energy of the sound waves into electrical currents, the amplifier proper which amplifies these currents, and a loud speaker unit which converts the energy back into sound waves.

The ordinary carbon microphone is unsatisfactory for heart sound work because the carbon hiss, which is always present to some degree, when amplified tends to obscure the heart sounds. The microphone of choice in this work is the electromagnetic type. This is essentially a head phone or loud speaker unit, the diaphragm of which is held against the chest wall. The diaphragm, set in vibration by the heart sounds, causes small electrical currents to be set up in the coils of the microphone, which are in turn led into the amplifier.

As stated above, the amplifier involves the principle of the three element thermo-ionic valve or radio tube, which is as follows: any variations in a small current passing into the tube produces similar variations in a much larger current; this larger current passes through the primary of a transformer, and the current induced by it in the secondary is used to vary a still larger current in the next tube. A tube and its transformer are known as one stage. The amplifier is made up of four stages. Ordinarily more than three stages of audio frequency amplification are difficult to keep balanced. However, in order to use four stages and thus obtain the required gain, an extra stage was added in the form of a pre-amplifier with a separate 45-volt "B" battery. The second and third stages are supplied with 90 volts. In the fourth stage the current is divided between two tubes (push pull) which are supplied with 180 volts. The high tension current is obtained from ordinary "B" batteries. Any type of "B" eliminator is unsatisfactory in this work as it is impossible to eliminate all the hum. The vacuum tubes used in the first three stages are the ordinary 201A type, while in the

final stage there are two 171A type power tubes. As noises from the power lines are at times troublesome, vacuum tubes, heated by alternating current, were found satisfactory.

In order that small portions of the energy in the last tubes do not pass along the coupling wires to an earlier tube, to be magnified and appear as whistles or howls, condensers of two microfarad capacity are connected from the filament of each tube to the other side of the "B" battery.



From the last transformer the current is passed to a loud speaker unit, the horn of which is replaced by a Bowles' multiple stethoscope. This permits listening under similar conditions to which one is accustomed. By adding more ear tubes, practically any number of individuals may listen at one time.

As many external noises originating on the skin surface and in the room are of a higher frequency than the heart sounds, it was found advantageous to filter out the higher-pitched sounds by means of condensers of varying capacities. A multiple switch serves to bring any one of these condensers into play. These also serve to suppress sounds of high pitch originating in the heart and at the same time preserves those of low frequency. The condensers are placed across the secondary of the last transformer.

In order to make the instrument portable it is housed in a dinner wagon type of box with the controls placed on the top and the amplifier and batteries below. A charger, mounted with the batteries, keeps the wet cells always fully charged.

The Icterus Index in Lobar Pneumonia

H. CLAYTON MOOREHOUSE, '31

LOBAR pneumonia is accredited as being one of the five principal causes of death by disease. Following the influenzal epidemic of 1918-19, the occurrence of typical cases of lobar pneumonia showed a marked decline due to the blurring of the text-book picture by influenzal symptoms. Of late, however, there has been a notable disappearance of the atypical features with a corresponding increase in the incidence of clear-cut cases of lobar pneumonia.

It has been observed that a jaundice, which may be seen clinically, appears in some cases of typical lobar pneumonia. In view of this fact, it occurred to Elton of Detroit that there might exist a relationship between the crisis of the disease and the bile solubility of the pneumococcus. Sputum and blood were obtained from several patients at the crises, and it was found that the pneumococci, together with some of the fibrin in the sputum, dissolved in the blood serum after several hours.

The results were of such interest that further investigation was made. In seventy cases of lobar pneumonia admitted consecutively to hospital, daily determinations of the icterus index, the serum bilirubin and the van den Bergh reaction were made. The icterus index is the measure of intensity of the yellow color of the blood serum and is discovered by colorimetric comparison of the serum with a standard solution of potassium dichromate which is considered to have a unity index. The normal range of the icterus index is from one to five, while the index of latent jaundice lies between six and fifteen.

The van den Bergh reaction indicates the sum of the bilirubin formed directly from the hemoglobin and that bilirubin which has passed through the polygonal cells and been changed to give a second type of bilirubin. The diazo reagent is added to the blood serum and any color change with the time required for its occurrence is noted.

The serum bilirubin is measured in mgms. per 100 cc. of blood serum. Its normal range is stated to be from 0.24 to 0.97 mgms. per 100 cc., which corresponds to an icterus index of one to five. The determination is made by the van den Bergh reaction which is either qualitative or quantitative, while not all the seventy cases were etiologically typed and seventeen showed a definite influenzal factor, the majority were clinically lobar pneumonias.

The characteristics of the latent jaundice exposed by these determinations are interesting. The startling revelation is that the bile solubility phenomenon may indeed partially account for the crisis so often seen in primary lobar pneumonia, and that in no case where the icterus index exceeded seventeen was the outcome fatal.

The second point of interest is that when the pleural exudate appeared, the icterus index had already dropped from the peak of its rise or did so promptly after the formation of the fluid. It was also

found that while the index of fatal cases never exceeded seventeen, the course of the index was still in its ascent when the patient died.

The practical application of this research is in the latent jaundice disclosed. While only three cases of the seventy showed a clinical jaundice, many showed a pigmentation of the sclera, easily overlooked. Unexpectedly the laboratory procedure showed the serum bilirubin to be increased without exception.

The cause is obscure. It may be associated with a toxic hepatitis which was certainly present as indicated by a fair percentage of biphasic van den Bergh reactions and by the focal necrotic areas in the liver, found in those cases that came to autopsy. The cause may be concerned with the anoxemia of pneumonia.

The conclusion that the crisis in lobar pneumonia is largely concerned with the bile solubility phenomenon, while not inconceivable, as yet lacks sufficient proof. Moreover, though the icterus index may reach the levels of clinical jaundice during the course of the pneumonia, the incidence of that degree of jaundice, associated with the disease, is low. The index is highest in those cases terminated by crisis and when it exceeds seventeen, no case of the series is fatal.

No clue is given as to why the index should fall at the formation of pleural fluid; but the fact that it does, is outstanding and herein lies the clinical value of the work as it has progressed to date. In a typical case of lobar pneumonia, the clinician, by daily determinations of the icterus index, may predict with a fair degree of accuracy:

1. Whether or not the case will be fatal;
2. Whether or not it will proceed to crisis;
3. Whether or not there will form a pleural exudate with the potentiality of empyema.

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Congenital Laryngeal Stridor

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A BABY, four and a half months old, weighing six pounds, was born at full term, without instruments. It was noticed at birth that she made a peculiar noise on breathing, which has persisted and has increased in intensity. The mother notices that she sneezes more than the ordinary baby, and she thinks that she also coughs a little more, but the condition shows no tendency to interfere with the child's growth or comfort. When the child is active, the stridor is very noticeable and when the child sleeps it may take a few breaths without the noise being observed, but stridor is present practically all the time during waking and sleeping periods. The mother has never seen the baby cyanosed.

The baby is breast-fed and has no trouble in nursing, no trouble in crying or coughing, and sleeps well, has practically no vomiting, and the bowels are regular.

An examination reveals a baby of good color, with normal tissue turgor and a weight of twelve pounds and ten ounces. Nothing abnormal is found in the heart, and no thymus or thyroid enlargement. The baby shows the usual mental and physical development of a healthy baby of its age, with the exception of a very slight Harrison sulcus and a slighter appearance of a pigeon breast. The larynx moves up and down with respiration.

This peculiar stridulous noise is heard only on inspiration and is aggravated by excitement. Closure of the nostrils fails to make any change in its character. The alæ nasi are working normally, no undue drawing in of the intercostal spaces is noticed nor any other evidence of labored breathing. The noise is like a loud crowing or croaking sound. Pushing the lower jaw forward or putting the head well back stops the stridor.

The noise has been described as similar to that of a child choking, or like the clucking of a chicken. Young babies may occasionally make the same noise when suddenly awakened or frightened, but it lasts only for one or two inspirations. The normal baby sometimes makes the same noise when nursing.

Dr. S. Thompson examined the child's larynx and reported as follows: "The epiglottis folds backward and the arytenæpiglottic folds are so approximated as to render the transverse diameter of the larynx extremely narrow—this condition can be accurately imitated on the cadaver of the normal infant by making suction upon the cut end of the trachea." These are the classical findings.

The usual history in cases of congenital laryngeal stridor is that the stridor is present at birth or commences within a week or two of birth;

that the stridor is present only on inspiration but that in severe cases there may be a short croak on expiration. The loudness and pitch of the crowing vary from time to time, but even in the severest cases there may be at times a slight intermission.

In slight cases the stridor ceases during sleep. In general, it increases in severity for the first few weeks and remains the same up to about the sixth month, when it begins spontaneously to pass off and usually by the end of the second year it is gone. Mental excitement aggravates it. In the later stages it is only heard on occasions of special exertion or excitement.

The vestibule of the larynx becomes changed and it retains its characteristic deformity long after the stridor has ceased. It has been recognized in children of nine and ten years. If the case is severe, marked changes occur in the bony framework of the chest—pigeon breast, etc.

The etiology of this condition has been much discussed but as yet is not thoroughly understood. The consensus of opinion is that it is a functional, not a structural, one. John Thompson and Logan Turner hold that the primary cause of the obstruction is an inco-ordinated spasmodic action of the muscles of respiration, a choreiform respiratory spasm—analagous to stammering.

At the staff meeting of the Mayo clinic in September, 1930, Kennedy discussed this condition and spoke of the theory held by some that it is due to a disturbance of the central nervous system at the source of innervation of the muscles of the larynx.

Kennedy says of thirty cases of congenital laryngeal stridor seen at Mayo's, in the last ten years, fifteen were referred with stridor as the chief complaint and 50 percent. of these had been sent on with a diagnosis of enlarged thymus and had received X-ray treatment without benefit. At the present time the question as to what constitutes an enlarged thymus and what symptoms may be considered as due to the thymus, whether or not it is enlarged, is not answered definitely. Primary tumors of the thymus are exceedingly rare. No death from enlarged thymus, either spontaneously or during or after an anæsthesia has followed in any of their operations in new-born infants or older children in ten years. An enlarged thymus can seldom or never be established as a cause of death.

The recognition in uncomplicated cases is easy. The character of the stridor, the time of onset, the normal cry, the general well-being of the infant, make it easily recognized from papilloma of the larynx, laryngitis, or laryngismus stridulus.

Audible respiration occurs in children in an obstruction of the nasal passages by coryza or adenoids—the respiration is snuffling and associated with mouth breathing and is aggravated by closing the mouth. The noise usually ceases when you close the nostrils, closing the mouth or nose in stridor does not alter the sound. Swelling of the tonsillar region by angina, diphtheria, scarlet fever, retropharyngeal

abscess, and chronic hyperplasia of the tonsils cause noisy breathing also, but the time of onset in laryngeal spasm and the absence of associated clinical symptoms usually clears the picture.

Enlargement of bronchial and tracheal glands, papilloma of the larynx, and laryngismus stridulus must be excluded.

In the noisy respiration of bronchial and tracheal gland enlargement, the stridor is lower pitched and generally louder during expiration,—the laryngeal movements are much less extensive, and the voice and cry are generally affected. Along with this, cachexia may be present.

Laryngismus stridulus follows in the wake of rickety manifestations and is not usually seen under three months of age.

The main symptoms of papilloma of the larynx are stridorous breathing, a hoarse cry and a croupy cough. Papilloma is supposed to be present from birth but does not usually give rise to many symptoms before two or three years of age.

In uncomplicated cases, recovery always takes place. These children must be protected from acute respiratory infections on account of the increased danger of broncho-pneumonia.

Treatment: Proper diet under good hygienic conditions usually brings the case to a satisfactory termination.

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Some Border-Line Problems in Obstetrics

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TOXAEMIAS OF PREGNANCY

IN Obstetrics, as in all the departments of Medicine, it is the border-line case that gives us the most concern. The clear-cut, definite case is readily diagnosed and treated. The border-line case calls for keener judgment diagnostically, and usually requires much more careful consideration when it comes to treatment. I propose to go over only a few of border-line problems in this paper. I will endeavor to choose the problems that are most commonly met with.

VOMITING OF PREGNANCY

Vomiting of pregnancy is a fairly common complication and in some instances calls for careful judgment both in diagnosis and treatment. Clinically, we may divide vomiting of pregnancy into three classes: (a) mild, (b) moderate, and (c) severe.

It is the severe form that will be included in this paper. The diagnosis of this form of vomiting is generally easily made. The treatment carried out is somewhat as follows. The patient is in bed in a warm, quiet room, preferably with a good nurse in attendance. No food or fluids are allowed to be taken by mouth. The temperature and pulse are noted every four hours. The patient is given fluids in the following manners. Five percent. glucose is given intravenously. This may be given in 500 c.c. doses, once or twice daily, or the McConnell method may be used. McConnell advises giving glucose solution intravenously by means of a constant drip at the rate of forty drops per minute. The needle is left in the vein if necessary for several days until the treatment is complete. A ten percent. glucose solution may be used in the form of a Murphy drip by bowel. To the Murphy drip solution is added one drachm of sodium bromide and a half a drachm of chloral hydrate each evening at eight o'clock. In restless cases, grs. $\frac{1}{6}$ or $\frac{1}{8}$ of morphine may be used as required. Additional fluids may be given by means of interstitial saline daily. The patient should have a colonic irrigation at least every morning. The intake and output of fluids are measured every twenty-four hours. A urine analysis is done daily and the patient's blood chemistry is checked. This treatment is carried out for approximately one week. At the end of this time one should be in a position to judge whether or not the patient will be in condition to continue her pregnancy. The important points on which one relies for his decision at this time are:

- (a) The nausea and vomiting should be diminishing.
- (b) The pulse rate and temperature should be approaching normal.
- (c) The daily output of urine should be increasing in amount and approaching normal.
- (d) Urobilinuria, if present in severe cases, signifies liver degeneration and should rapidly diminish in favorable cases.

Summary

1. All vomiting due to pregnancy should be looked upon as having a toxic origin.
2. It has been definitely proven that these cases are associated with a carbohydrate deficiency.
3. They also show a definite dehydration.
4. The severe case usually shows evidence of liver degeneration in the form of urobilinuria.
5. Neuroses is a factor in a number of these cases but is not a primary cause.
6. If the above treatment is thoroughly carried out, the results are highly satisfactory.

PRE-ECLAMPSIA

The earliest and most reliable sign of this condition is an elevated systolic blood pressure. A systolic blood pressure over 135 should be considered toxic in origin until proven otherwise, and the patient immediately put upon proper treatment. The treatment consists of rest and a salt diminished diet. Some protein restriction may be advised but is not essential. If the condition improves, more freedom with diet may be allowed. If the condition does not improve or grows worse, the patient should be at rest in bed on a salt-free and low-protein diet. The bowels are kept freely open and the patient is seen daily. The urine analysis and blood pressure are watched daily. If these precautions are taken early, the results are usually good. The majority of such patients may be guided along until at or near term. I am, however, strongly in favor of a medicinal induction of labor in all these toxic cases that are not clinically satisfactory under proper management. Such an induction, of course, is used chiefly for the patients in whom the baby is viable. It is a mistake to prolong the induction if you feel the baby is up to viability and the toxæmia is growing worse or even remaining stationary. It is in this type of border-line toxæmia that fine obstetric judgment is required. I feel sure that many babies are lost through attempting to carry the mother too far before inducing. The viability of the baby is, of course, a questionable matter if the induction is done before the end of the eighth month, but the majority of babies born after the end of the eighth month will likely live and thrive.

ECLAMPSIA

Eclampsia is fast diminishing due to better pre-natal care. We have had but one case of eclampsia admitted to our indoor service from the pre-natal clinic during the past seven years. This patient had been advised at the pre-natal clinic to come into the hospital for treatment but she did not do so. The following week this patient was admitted to the hospital with eclampsia.

The treatment of eclampsia is the Stroganoff or Modified Stroganoff method. The details of this method are as follows:

- (a) The patient is in a comfortable bed in a quiet, darkened room, with a good nurse in attendance.
- (b) The convulsions are controlled with morphine, grs. $\frac{1}{2}$ or $\frac{1}{4}$. This may be repeated, if necessary, in $\frac{1}{4}$ gr. doses until the patient's respirations are down to twelve per minute.
- (c) Paraldehyde solution 2 c.c. intravenously may be used if morphine fails.
- (d) Dry heat is applied abundantly until the patient perspires freely. She is left in the sweat for thirty minutes, then is gradually taken out. This is repeated every four hours.
- (e) The patient is catheterized, if necessary, and an enema given if the acute stage is wearing off.
- (f) Phlebotomy is carried out whenever the systolic pressure is 190 or over.
- (g) The patient's room must be kept in absolute quietness, *e.g.*, no slamming of doors, no rattling windows and no loud talking. Extraneous stimuli are usually the precipitating causes of a convulsion.
- (h) The blood chemistry and the urine analysis of the patient are done while this treatment is being carried out.
- (i) If the patient is definitely improving, labor is better left for at least a few days longer.
- (j) If the patient does not improve or is getting worse, labor should be induced by the bag or bougie method.
- (k) Cæsarean Section is not one of our methods for the treatment of eclampsia because the eclamptic patient is not a suitable subject for this operation. Cæsarean section, however, may be resorted to occasionally in the treatment of eclampsia providing there is some good obstetric reason other than eclampsia for doing the operation, *e.g.*, a primipara at term with the baby's head floating.

NORMAL LABOR

This is discussed because of the fact that quite frequently a normal labor is converted into an abnormal labor by some untimely manœuvre on the part of the attending physician. The differential diagnosis between a normal and an abnormal labor is often difficult. This is one of the most important border-line problems in obstetrics.

Premature assistance in normal labor is almost certain to be followed with trouble. I refer here to such manœuvres as the premature application of forceps. This is often done without an obstetric justification. In some cases it is done because the patient and the patient's relatives are urging the doctor in attendance to do something. At times it is done because the physician is in a hurry. In all these instances, a normal labor is converted into an operative and abnormal labor. The following are the important points for the attending physician to keep in touch with during labor,

- (a) The mother's temperature and pulse rate. This should be recorded every two hours during the first stage and the pulse rate recorded at least every half hour during the second stage.
- (b) The rate and rhythm of the baby's heart should be recorded every two hours during the first stage and every half-hour during the second stage.
- (c) The advancement of the presenting part should be checked by abdominal palpation every four hours during the first stage and every hour during the second stage.
- (d) Vaginal examinations are minimized by the above procedures and are only done when progress is not satisfactory or the presenting part is indefinite.
- (e) The pelvic measurements of the patient should be taken at the beginning of labor in all cases where they have not been taken previously. The pelvimeter is as important to the obstetrician as the stethoscope is to the internist.
- (f) Ample time must be allowed for each of the three stages of labor.
- (g) Obstetric forceps are to be used only when there is justification for their use. Forceps, generally speaking, should never be used on the floating head. Forceps used when the head is at or in the brim is a major obstetric operation, and is only justified when the life of the mother or baby becomes endangered. The use of forceps on the head when it is presenting at the outlet should not be a routine obstetric procedure but again only used when the condition of the mother or baby requires it. Generally speaking, it is not wise to leave the head on the perineum much over one hour and during this time there should be satisfactory progress.
- (h) The attending physician should keep in close touch with the condition of the mother and baby throughout labor. This can be readily done in all hospitals that carry an obstetric house surgeon. Otherwise, it is quite possible to train the obstetric nurse to record the foetal heart rate and keep a proper labor record throughout. I find that a well trained nurse can be trained to do practically all that is required in the average case. On the other hand, a well trained obstetric house surgeon is invaluable.

ABNORMAL LABOR

It will be impossible to discuss this problem fully in this paper. I propose to go over a few of the more common abnormalities.

OCCIPITO POSTERIOR

The R. O. P. is the most common of the posterior positions. The baby's head lies in the right oblique diameter of the pelvic brim with occiput to the back of the mother. The cause of this malpresentation is not always clear. It is probably due to disproportion or to some disturbance between the baby's head and the mother's pelvis. If the head

undergoes a normal mechanism, as it usually does, and rotates with the occiput to the front, extra time must be allowed for the long internal rotation. The average time required for the second stage in occipito anterior presentations is two to four hours for primiparous patients. In occipito posterior cases the average time for the second stage is six to eight hours. If this fact be kept in mind, we find that about nineteen posterior cases out of twenty will terminate normally when allowed the extra time.

Clinically the two most common difficulties encountered in occipito posterior cases are, (a) a definite diagnosis, (b) the proper treatment. The diagnosis of this condition is made on the following points:

- (a) All R. O. A. positions are very liable to end up as R. O. P. positions.
- (b) Whenever the second stage of labor is unduly prolonged in head first cases, one should be suspicious at once of an occipito posterior position. This position is frequently accompanied by a premature rupture of the membranes.
- (c) A certain diagnosis is only made by doing a bi-manual examination if the cervix is partly dilated. The following points are made out: the position of the ear; the location of the anterior fontanel; and the occiput. The direction in which the pinna of the ear is pointing is diagnostic.

The treatment or management of the occipito posterior position follows upon your diagnosis and will depend upon the particular position of the head in relation to the brim of the pelvis. A synopsis of the management of these cases is submitted below.

Floating Head	Head at Brim	Head in Brim	Head above Brim
1. Leave alone.	1. Leave alone.	1. Leave alone.	1. Leave alone.
2. M. R. N. D.	2. M. R. N. D.	2. M. R. N. D.	2. M. R. N. D.
3. M. R. F. D.	3. M. R. F. D.	3. M. R. F. D.	3. M. R. F. D.
4. Internal Version.	4. Scanzoni	4. Scanzoni	4. Pubiotomy.
5. Caesarean Section.	Manœuvre.	Manœuvre.	5. Craniotomy.
	5. Kielland	5. Kielland	
	Manœuvre.	Manœuvre.	
	6. Internal Version.	6. Internal Version.	
	7. Caesarean Section.	7. Caesarean Section.	

N.B.—M. R. N. D. means Manual Rotation, Normal Delivery.
M. R. F. D. means Manual Rotation, Forcep Delivery.

Comments

1. The best results in occipito posterior positions are obtained by watchful and judicious waiting. Leaving the case alone so long as the progress is reasonably satisfactory.

2. If interference becomes necessary, any one of the above mentioned procedures may be carried out, depending upon the particular position of the baby's head upon interference. I am strongly against the use of forceps on the floating head. I am in favor of M. R. F. D. if interference is necessary when the head is in the brim. The Scanzoni Manœuvre is also giving me good results and I can highly recommend it. I am not in favor of the use of the Kielland forcep, but I believe it is giving quite good results in some clinics. This forcep, however, has not been commonly adopted in this country. Internal

version is accompanied or followed with such a high baby mortality that it is not one of the choice procedures in the occipito posterior position. It is therefore only used when there is a definite pelvic or maternal reason for using it.

BREECH PRESENTATION

I only wish to mention here the recognized importance of doing pre-natal external versions whenever possible on all these presentations. By so doing, the number of breech labors will be minimized. This also means a decrease in foetal morbidity and mortality, and also a diminished maternal morbidity.

PLACENTA PREVIA

Diagnosis: Placenta previa usually gives some preliminary warning of its presence during the last month of pregnancy. The earliest sign is a little vaginal bleeding unaccompanied with pain. Such a history should make one very suspicious of placenta previa. A definite diagnosis is only made by doing a careful and aseptic bi-manual examination, and feeling the placenta in its abnormal position.

Treatment: A placenta previa suspect should be sent into the hospital where she can be under constant observation. If at any time, especially at or near term, a marked hemorrhage occurs, a Cæsarean section is the treatment of choice in all primiparous patients, irrespective of the particular type of placenta previa. In multiparous patients with a marginal placenta previa, the orthodox treatment of rupturing the membranes and allowing the head to drop lower or doing an internal version may be justified. Certainly all cases of central placenta previa should be treated by Cæsarean section.

ACCIDENTAL HEMORRHAGE

Diagnosis: This is a hemorrhage occurring usually during the last month of pregnancy and it is accompanied with abdominal pain. The amount of hemorrhage varies. The blood may be concealed or visible or both. The pain is colicky in nature, becoming more severe and constant. A definite diagnosis is only made by doing a careful and aseptic bi-manual examination in an attempt to differentiate it from placenta previa. Accidental hemorrhage may occur during any time of pregnancy but we will deal here only with those cases occurring during the last month. When the examiner's hand is placed over the fundus of the uterus it feels abnormally tense and tender. The general condition of the patient in the early stage is fairly good, but in most cases her condition grows rapidly worse and she is in a state of shock out of proportion to the visible hemorrhage.

Treatment: There are two methods of treatment which may be adopted:

- (a) The Dublin method which consists in packing the cervix and vagina tightly with gauze and putting a tight binder around the patient's abdomen. This is done to assist in checking the hemorrhage and dilating the cervix. The patient is kept quiet in bed and morphine, grs. $\frac{1}{6}$, may be given if necessary.

Pituitary extract, $\frac{1}{2}$ c.c., may be given two hours later, if necessary, to stimulate contractions. The pituitary extract may be repeated within two hours. When the cervix is fully dilated labor usually terminates spontaneously, otherwise assistance may be rendered. This method of treatment is only suitable for the mild and moderate degrees of accidental hemorrhage.

- (b) Cæsarean section method, with or without hysterectomy. This is the method of choice in all cases of accidental hemorrhage that are reasonably severe and that are associated with a certain degree of shock in which the condition of the uterine body is open to question.

The fetal mortality with accidental hemorrhage is exceedingly high. The maternal mortality is decreasing proportionately to the method of treatment adopted for the individual case. One might say that in all cases of doubt, Cæsarean section at or near term is the treatment of choice.

DEFORMITIES OF THE PELVIS

CLASSIFICATION

	Common Group		Rare Group
96% of Deform- ities	1. Flat Pelvis (Rachitic).	4% of Deform- ities	1. Deformities due to skeletal disease, e.g., Osteomalacic pelvis.
	2. Flat Pelvis (Non-rachitic).		2. Deformities due to disease of the vertebral column, e.g.,
	3. Generally contracted Pelvis.		(a) Kyphotic pelvis;
	4. Generally contracted Flat Pelvis.		(b) Scolyotic pelvis.
			3. Deformities due to disease of pelvic bones, e.g.
			(a) Nagele's Pelvis;
			(b) Robert's Pelvis.
			4. Spondylolisthetic Pelvis.

Diagnosis. It is as impossible to diagnose pelvic deformity by looking at the patient or depending upon her history of previous births as it is to diagnose pulmonary tuberculosis without an investigation by all the means at our disposal. The external and internal pelvic measurements should be taken in all pre-natal cases before the end of the seventh month. One may then prepare for a premature induction. Familiarity with the use of the pelvimeter is essential. Normal or large external measurements do not necessarily mean that the internal measurements are normal. Therefore, internal measurements should be checked at least once before the end of the seventh month. The baby's head should be firmly fixing in the pelvic brim one month before term in primiparous patients. If this does not occur it means one of two things. Namely, the expected date is miscalculated or there is disproportion. In such a case the history and measurements should again be checked carefully. The use of the internal pelvimeter in a primiparous patient may require an anæsthetic. It is only in the border-line or contracted pelvis that I make use of the internal pelvimeter.

Treatment: For purposes of management clinically, we depend upon the anterior posterior diameter of the pelvic brim mostly. This

diameter should be carefully checked in all questionable cases. We may divide contracted pelvis into three groups according to the contraction of the anterior posterior diameter of the brim, as follows:

Moderate Group
9—7.5 cm.

Minor Group
10—9 cm.

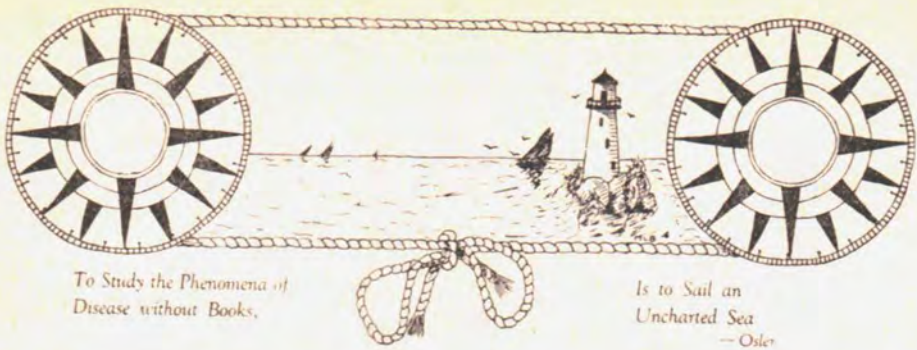
Major Group
7.5 cm. down

Management: The management of the major degrees of contraction is easily decided upon. Cæsarean section at or near term is the proper procedure. The type of section done will vary with the individual operator. Personally, I am very much in favor of a low cervical Cæsarean section for these cases. The management of the minor contracted pelvis is reasonably simple. The majority of these cases may be allowed to go to full term and then will go through a spontaneous delivery. The exceptional case with anterior posterior diameter of nine c.m. and a fairly large baby may require a Cæsarean section at or near full term. The relationship between the mother's pelvis and the baby's head will be the deciding factor in this group.

The management of the moderate degree of contraction offers considerable more difficulty. This is truly the border-line type of pelvis and will require more consideration and finer judgment than the management of either of the other two types. The following are the possible methods of managing this type of pelvis.

- (a) You may allow the patient to go to full term and either deliver herself spontaneously or delivery assisted by the obstetrician with forceps. This is not an ideal method of management, because it is the type of case in which forceps are usually contraindicated.
- (b) The patient may have an induction of labor before full term and after viability of the baby. The time of option here is when the obstetrician feels that the head will pass through the pelvis without too much difficulty, *i.e.*, at the time when there is the least disproportion between the mother's pelvis and the baby's head.
- (c) Allow the patient to go to full term and into labor spontaneously. A test labor is now allowed under careful supervision. There is considerable difference in what is meant by a test labor. A good test labor is one which is allowed to progress until the cervix is fully dilated, the membranes ruptured and after this a reasonable time allowed for the head to mould through the pelvic brim if it can. This patient must be in a well-regulated hospital where the progress of her labor can be watched in detail. Many of these cases will be found to terminate spontaneously. If after a good test, labor progress is not satisfactory, a low cervical Cæsarean section is done.

Personally, I am much in favor of method (c) for treatment of the border-line pelvis. The final results for both mother and baby are much better. There is considerably less shock and trauma to both baby and mother when a low cervical Cæsarean section is done than when assistance is required with forceps. I refer here, particularly, to the use of high or mid forceps.



Medical and Surgical Periodicals

ETHEL SULLIVAN

*Librarian, Medical School, University of Western Ontario,
London, Canada*

IN the splendid article, "The Mariner's Compass," which appeared in the first issue of this journal, attention was called to the importance of the current periodical to anyone interested in the subject of medicine, whether he be general practitioner, specialist, research worker, or student. That you may know what the library has to offer in respect to current literature, a few of the leading journals devoted to medicine, surgery and the specialties to be found there, will be mentioned in this publication from time to time.

Worthy of first place, because of its being the official organ of the leading medical association in our country, is the Canadian Medical Association Journal. To most of you this journal needs no introduction but for those to whom it is not familiar a brief outline may be necessary. Published monthly since 1911, it has grown in size so rapidly that it now demands annually two volumes of six issues each. Here, each month original articles from the pens of the leaders in the medical profession throughout Canada may be very profitably read and here, too, interesting news concerning hospital service and the universities may be found. The abstract section is gradually developing and should be of untold value to the busy practitioner who has the time neither to search for nor to read the various papers.

Two outstanding American publications devoted to general medicine which, coming as they do from our near neighbor, should rank next in importance, are the Journal of the American Medical Association and the American Journal of the Medical Sciences. The former, a weekly, supplies some 4,000 reading pages annually. Therein may be found information on various subjects and topics such as cannot be located elsewhere. It is to the "Educational Number" of this journal that the student goes to find his list of "Hospitals for Internship"; it is to it that the research worker goes to find abstracts of articles

published in some foreign language or in some periodical not at hand and to it also goes the practitioner to seek the "latest" on some subject of very special interest to him at the time. When one realizes that 5,042,480 issues of the journal were printed in 1928, one may judge the immense circulation it has and the popularity it must enjoy. While the American Journal of the Medical Sciences, now in its 180th volume of its second series, does not cover such wide range of topics as does the Journal of the American Medical Association, yet it is a medical publication of the highest type and of very wide circulation.

The British Medical Journal and the Lancet are the two British periodicals most generally read in this country. The former, the official organ of the British Medical Association, contains information of a similar nature to that contained in the J. A. M. A. Its "Educational Number," appearing early in September, discusses every important current topic bearing on medical education in the British Isles, such as Medical Schools and Colleges, Post-Graduate Courses, Hospitals for Internship, etc. Of very special interest to us is the Canadian Supplement appearing with the issue of August 30th, in which are given some of the leading addresses delivered at the meeting held in Winnipeg during the past summer. The Lancet, founded in 1823, may be regarded as the earliest British journal treating of medical subjects, the four that came into existence before that date surviving but a comparatively short time. By many, the Lancet is highly favored and it is a question whether it or the British Medical Journal has the larger circulation in this country. The Practitioner, the Proceedings of the Royal Society of Medicine, the Quarterly Journal of Medicine, the Edinburgh Medical Journal and several others might well be regarded as ranking amongst the best of British medical publications. Worthy of particular notice is the July issue of the Practitioner as this number, treating of the "Diseases of Children" only, contains papers written by such noted pediatricians as C. F. Still, Sir Robert Jones, John Fraser, Donald Paterson, and a number of others.

The Presse Médicale and the Paris Médicale are the leading French general medical periodicals. The former, published bi-weekly, may be found among our current periodicals.

In so far as German periodicals are concerned, we are better equipped as no fewer than five of their leading general medical journals are always available in the library. These enable the clinician and the research worker to keep in touch with the advances in medical science being made in Germany today.

In addition to the above mentioned general type journals, it may be well to list such publications as Guy's Hospital Reports, St. Bartholomew's Hospital Reports, the Medical Clinics of North America, Progressive Medicine, and the Collected Papers of the Mayo Clinic, all of which contain varied clinical material prepared for us by the leaders in the medical profession here and abroad.

He who is interested in clinical and laboratory diagnosis may find in such publications as the *Journal of Experimental Medicine*, *Journal of Laboratory and Clinical Medicine*, and the *Journal of Clinical Investigation* much that will prove of material aid in his investigations.

When such men as Lord Moynihan, Sir D'Arcy Power, and Sir Robert Jones, are on the Editorial Committee of a medical journal there can be little question of the merit of the publication. The *British Journal of Surgery*, under the guidance of such outstanding authorities, appears four times a year, and each issue is always eagerly awaited. In addition to very worth-while original papers, some subject of historical interest is always included in the list of contents. At present a series of "Epoch-making Books in British Surgery" is being featured. To many, the "Atlas of Pathological Anatomy," which appeared as a supplement to this journal for the past four years, has proved of great assistance. In fact, so popular have these supplements become that they have been published in book form in order that they may be readily accessible to all.

The *Annals of Surgery*, *Archives of Surgery*, *American Journal of Surgery*, and *Surgery, Gynecology and Obstetrics* are the popular American surgical publications. The April issue of the *Archives of Surgery* was published in honor of the 60th birthday of Dr. Harvey Cushing. All the eighty-two contributors were at some time his pupils and are now surgeons or physicians of at least national reputation. *Surgery, Gynecology and Obstetrics*, with the *International Abstract of Surgery* as official journal of the American College of Surgeons, contains interesting details concerning this organization as well as splendid articles on each of the three subjects included in the title. A section featuring the "Master Surgeons of America," and "Old Masterpieces in Surgery," makes very enjoyable reading. With mention of the *Surgical Clinics of North America*, and the *Journal of Bone and Joint Surgery*, it is probable that attention has been directed to the commoner surgical periodicals to be found in our library. The latter is the official organ not only of the American Orthopedic Association but also of the British Orthopedic Association. Because of this, we are kept in touch with recent developments in the field of orthopædia both in this country and in the British Isles.

In conclusion, it may be noted that with very few exceptions a complete file of all the journals mentioned herein is in the library and will be placed at the disposal of all who may be interested.

In Memoriam

DR. THOMAS L. GRAY

FEW tasks are more difficult than to satisfactorily express an adequate and just appreciation of one the memory of whose life must remain a cherished part of our own.

Dr. Thos. L. Gray of St. Thomas, Ont., whose courtly manner, spontaneous humor and warm companionship have been a happy feature of the University of Western Ontario medical gatherings, is now the subject of our grateful memory. His life, which has meant so much to all with whom he came in contact, came to a close on November 14th of this year, after an active and useful career of fifty-eight years.

He was born near Clinton, Ontario, of scholarly parents. His father was popularly known as Elder John Gray, Baptist minister at New Sarum, Ontario, for many years.

A graduate of the Medical School of the University of Western Ontario in 1897, Dr. Gray first practised in New Sarum for a time, then for another period in Clinton, going to St. Thomas thirty years ago. He was one of Ontario's pioneers in the field of radiology, rapidly establishing a reputation as an authority on X-ray diagnosis. He was a keen student of medicine, combining with his sympathetic nature a rare skill and knowledge, retaining many of the fine qualities of the old-time family doctor, and exemplifying high qualities in unostentatious ways. Dr. Gray was an honorable man, he was our faithful friend, and we shall miss him.



—J. Graham White.

Editorial

THE SEASON'S GREETINGS!

The University of Western Ontario Medical Journal expresses for its readers and contributors traditional but most sincere wishes for a Merry Christmas and a Happy New Year!

The University of Western Ontario Medical Journal congratulates Dr. E. M. Watson, Assistant Professor of Clinical Medicine, upon his recent election to a Fellowship of the Royal College of Physicians (Edin.). This, an honorary degree, is given to men who have made outstanding contributions to medical knowledge. Dr. Watson is the third in Canada to receive this honor, and Western is gratified with the worthy work which it recognizes. Dr. Watson received his M.R.C.P. (Edin.) in 1924; and M.Sc (Western) in 1927.

The University of Western Ontario Medical Journal is now an established fact. As this publication advances in age, it is our ardent hope that the undergraduates will appreciate and take full advantage of the opportunities to contribute to its pages. Such contributions are necessary, not only for the success of the Journal, but also to materially aid in the success of the individual students who write them.

History gives us the names and lives of many men outstanding in medical science in all its ramifications. History also tells us that these men published. To acquire knowledge is a worthy aim, to be able to put such knowledge to practical use is still more worthy but nevertheless limited to one's immediate realm.

Publication of such knowledge should be the aim for all of us. In that way we give what we know to others, who may profit by it, and in so doing, we are amply repaid by the prestige we gain. When Osler went to Montreal he did not go as a stranger. He went as a young man, who, while still a student, had published. He was known at McGill before his arrival, through the medium of the articles, written in his student days.

A FRIENDLY GESTURE

- and -

A NEW YEAR'S GREETING

Your classmate of by-gone years may be far removed from contact with today's progress of our Alma Mater.

Perhaps the Journal would revive a friendship and spread Western Cheer through the coming year.

A suggestion follows :

**EDITOR, UNIVERSITY OF WESTERN ONTARIO
MEDICAL JOURNAL.**

Medical School, London, Ontario.

Enclosed is amount to cover.....subscriptions at \$1.00 each to be sent with appropriate greetings, bearing my name, to each of the following :

Name	Address
1.
2.
3.
4.
5.

NOTE.—This page is inserted by authority of The Executive of the Medical Alumni.

Those of us who are nearing the end of the undergraduate road can perhaps appreciate the desirability of writing for publication more than those of us who are just setting out. The years immediately after graduation are important ones. During that time the remainder of our lives is often determined or at least profoundly influenced. We look around us for positions which will mean a definite step forward. We apply, and are asked—"What have you published?"

Surely no more forcible lesson can be desired. Certainly no more forcible lesson will be forthcoming. Advancement in any line is based on the amount of work done. The amount of work done is best determined by the amount of knowledge we can give to others.

The Undergraduate Medical Journal offers to the Medical students an opportunity which hitherto has not been available. That is not written boastfully. It is a mere statement of fact. Some of us have already taken advantage of that opportunity, and will continue to do so. Others have still to break into print. Let us all determine to publish. If writing were of no value, those who have gone before us, those whose names live in history would not have persisted in it. Its value to ourselves and to the world at large is unlimited. It remains for us to take Time by the forelock, and when we are asked—"What have you published?"—we will be ready.—J. W. G.

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