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SHORT NOTES ON THE TREATMENT OF COMMON DEFORMITIES RESULTING FROM DISEASE.

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THE commonest deformities resulting from disease as opposed to deformities resulting from conditions preceding birth or violence after birth, may be classified as those due to tuberculous disease, to paralysis, to posture and to rickets. Each of these will be discussed separately.

As it is not the purpose of this paper to discuss the etiology, pathology, or treatment of these diseases causing deformities, I shall confine myself to a simple narration of how these deformities may be treated after their development.

DEFORMITIES DUE TO TUBERCULOUS DISEASE.

Tuberculosis is the most common of all the causes of deformity seen in this country, and as such demands our particular attention.

The commonest deformities resulting from tuberculosis may be divided into those of the spine, hip, knee, ankle, shoulder, elbow and wrist.

Speaking generally, the treatment of tuberculosis of any form is by rest, fresh air, and good food.

Deformities of the Spine.—The common deformities of the spine, due to tuberculous disease, are kyphosis and scoliosis. The

former is often most marked, the latter is rarely so. The former is a symptom which must be combated; the latter ordinarily may be disregarded.

Kyphosis is a danger to the patient in several ways, besides being an unsightly deformity. Beyond doubt its advent is sometimes associated with paraplegia, although this is rarely due to the direct pressure of bone, but rather to effusion or an extension of the inflammation. In the later stages of the disease, through the kyphosis, compression may be exerted on important organs and untoward symptoms may result. Acute or angular kyphosis is more serious than the more rounded variety, as this more frequently tends to cause compression, and in the thoracic region such compression may be followed by acute dilatation of the right side of the heart, and death may ensue. Thus, in treatment, kyphosis must be guarded against by carefully-adjusted apparatus. Rest in the treatment of tuberculous disease of the spine is not sufficient. Rest must be combined with fixation in the hyper-extended position.

The initial position of the tuberculous lesion in this affection is well known to you. The disease is said to begin in the anterior part of the body of a vertebra, adjacent to, and perhaps including, an inter-vertebral disc. These become eroded, and from the superimposed body weight the spine tends to fall forwards,—to become flexed. Now rest to the joint and the prevention of attrition are our main objects in the treatment of a tuberculous arthritis. This is best secured by hyper-extension. This fact is easily demonstrated by examining a cabinet specimen of the spinal column. I shall not enter into the details of treatment in the different regions of the spine by hyper-extension; sufficient is it to say that there is no region of the vertebral column that cannot be hyper-extended, and this without force. Hyper-extension may always be maintained by the use of plaster of Paris or a brace.

Before leaving this subject we should consider the treatment of those patients who are first brought to us with marked deformity. In these, although it is wise to attempt a gradual reduction of the deformity, the use of strong force, such as was recommended by Calot and others, is not advised, but rather is considered bad surgery.

The mechanical principles made use of in the gradual reduction of these deformities, simulate those of a lever. The power is employed at the kyphosis, the resistance over the manubrium and symphysis. When the patient is placed in the best position for fixation, and held in the corrected position, a brace or jacket may be moulded to fit the back. This method is adopted in even the worst cases of deformity, because the eroded parts of the anterior surface of the articular surface of the vertebrae do not tend

to be healed by bone, but rather by fibrous tissue, consequently as the patient's weight increases the deformity tends to become more marked.

Hip.—Tuberculous disease of the hip-joint is one of the most serious forms of tuberculosis. The commonest deformities which follow it are flexion and adduction, both of which produce apparent shortening of the limb and lameness. Flexion as a symptom of tuberculous disease of the hip appears early, and should be guarded against, as the joint is apt to become fixed with the thigh in this position. Adduction appears later in the disease, and may give rise to serious inconvenience.

These deformities are not necessary sequelae to tuberculous disease of the hip. In the treatment of tuberculous disease of the hip, the appearance of these deformities should be anticipated and the hip and extremity kept at perfect rest in a position of abduction and extension. It has been customary to attempt to do this by rest in bed, with extension by weight and pulley and counter-extension. This method, however, does not immobilize but simply assures general rest, and relieves muscular spasm, consequently the application of a plaster of Paris spica, or Thomas hip-splint, is to be preferred. This treatment is especially efficacious if the patient is kept at general rest in bed.

When a patient is brought to our notice at a later stage of the disease, when either flexion or adduction, or both of these deformities have appeared already, active interference is necessitated.

In the past, extension with a weight and pulley in the line of the deformity and counter-extension have been the most commonly employed means of treatment in deformities seen early. Many, however, prefer to force the deformed limb into normal position under anaesthesia, and to retain the limb in the corrected position by a brace or plaster of Paris. This treatment should, however, be considered only with caution.

When all signs of active disease have disappeared, if deformity exist and the hip is fixed and manually immovable, a sub-trochanteric or trans-trochanteric osteotomy may be performed, after the method of either Gant or Robert Jones.

Knee.—Tuberculosis of the knee is a less serious affection than that at the hip. It is accompanied, however, by such similar symptoms as muscular spasm, which in the case of the knee also tends to produce deformity. This first is demonstrated by flexion, and, possibly, by external rotation. It is by contraction or spasm of the ham-strings, that flexion is produced. If this is persistent, posterior subluxation of the tibia is likely to follow, and with this shortening of the muscles, and possibly the ligaments.

In the earliest treatment of this lesion, flexion must be anticipated. It is unnecessary, and can be avoided. The muscular

spasm at the knee can always be controlled by plaster of Paris or a Thomas knee brace, and one or both of these used in conjunction with general treatment should be followed by cure of the disease.

In the later stages, when deformity already exists, its reduction must be considered.

The mode of reduction will depend absolutely on existing conditions. If the flexion is due simply to muscular spasm without structural change or subluxation, gradual reduction by extension and counter-extension on a double-inclined plane may be treatment of election, although many prefer the cautious reduction of the deformity under an anaesthetic, with the subsequent maintenance of the correction by the use of plaster of Paris or a splint.

Treatment at a later date must of necessity be operative. Shortening of the ham-strings requires division of their tendons, manually or by the knife. Shortening of ligaments may demand reduction by "brisement forcé." Subluxation requires reduction.

The earliest treatment, then, of a fixed deformity, should be a manual attempt at its reduction, made under an anaesthetic and without the exercise of too great force. This is best done after the method of Whitman. In this, the thigh is extended on a fixed leg while the patient is in the prone position. In this way the danger of producing a tibial subluxation is minimized. Here I may mention the genuclast, of which there are several varieties. This is an instrument for the forcible reduction of flexion at the knee. It is of distinct service in experienced hands, but the method of Whitman is usually sufficient in cases which do not require incision.

If the deformity is due to shortening of tissues, accompanied by firm fibrous or bony union, a supra-condylar osteotomy may rarely be considered, but usually the knee joint must be opened from in front and a wedge removed. This operation must be attempted with caution, often in two stages, as the popliteal vessels may be shortened in compensation to the deformed position and constriction and interference with the circulation or a rupture may be caused by a sudden reposition of the leg.

Ankle.—Tuberculosis of this joint is less serious than in either of the foregoing.

Deformity rarely follows. A fixed joint is common, but this is not disadvantageous if the foot is in fair position. If, however, this be not so, a supra-malleolar osteotomy may be considered as early advised by Trendelenberg.

Shoulder.—Tuberculosis of the shoulder is less common than a similar lesion of the hip or knee. Fixation of this joint commonly follows this lesion, but here scapular movement is usually sufficient to give a fairly useful member. In some cases one must consider excision or arthroplasty, which is the formation of a

new joint, and which was early performed by Mr. Thomas, of Liverpool, and has, of recent years, been described on this continent, perhaps most notably by Murphy, of Chicago, and Scudder, of Boston. The latter operation is, however, rarely necessary, excision only usually assuring a movable joint.

Elbow.—Results of proper treatment of this lesion are better than in any other joint. Fixation, of course, is a common sequence. If the joint is fixed in a position of usefulness, it is questionable whether it is wise to interfere with it. If, however, interference is considered advisable, the surgeon may attempt to force movement under anaesthesia, but this is a questionable procedure, and its advisability would require much thought. If interference is necessitated because of fixation in a position of more or less disadvantage, excision, or better, excision and arthroplasty, such as already described, may be performed.

Wrist.—Tuberculous disease of the wrist joint in childhood is very rare. In a series of 3105 cases of tuberculosis of the bones and joints treated at the Hospital for the Ruptured and Crippled, in but four was the wrist joint involved. In 43 cases in which the wrist was resected by Ollier, the youngest patient was thirteen. When deformity results, the hand is held in the flexed position.

Children suffering from acute tuberculosis of the wrist, may be treated on general principles, and, again, children suffering from flexion due to tuberculosis, may be treated on the principles already laid down, but in adults, treatment by excision yields the best results, although the method of Bier, combined with fixation, has, perhaps, been followed with more striking results in this than in the treatment of any other joint.

In discussing this affection it is well to mention that it has been noted that disease of the wrist joint in adults is very apt to be complicated with disease of the lungs.

If excision is attempted it must be remembered that the disease is rarely confined to the joint. If the disease is active, nothing but the most radical excision will avail.

Later in the course of the disease, when such deformities as flexion have resulted, we may undertake an excision simply to rectify a malposition, in which case the less we do the better. Straighten the hand by an incision through the joint, or above it, if possible. If the fingers are fixed by adherent tendons, the possibility of being able to free the tendons and restore movement in the fingers must be carefully studied.

Deformities Due to Posture.

Scoliosis or Lateral Curvature is the name applied to a condition in which any series of vertebral spinous processes show a constant deviation from the median line of the body, a deviation always accompanied by the element of twisting.

It is rarely recognized by the patient or his, or her, friends as a spinal deformity, but the patient is usually brought for advice because of an accompanying deformity, such as high shoulder or prominent hip.

Pain is rare in patients presenting deformity of moderate degree, although in severe cases it may be present, and in these shortness of breath is common. This shortness of breath is often due to pressure on vital organs through deformity of the thoracic cavity.

The spinal curve may be simple, or, more frequently, compound, *i.e.*, when there is a second or compensatory curve in a different direction. The curve may be designated as functional when transitory, or structural if fixed. The position of the vertebrae of the patient when suspended, will demonstrate the character of the curve. Structural curves are always accompanied by rotation. This is best demonstrated in extreme flexion.

The pathological changes ordinarily found in scoliosis are not the result of disease of the bone, but are modifications of form and structure due to abnormal pressure and strain resulting in accordance with Wolf's law, which is "every change in the form and function of the bones, or of their function alone, is followed by certain definite changes in their internal architecture, and equally definite secondary alterations of their external conformation in accordance with mathematical laws."

Scoliosis may be either congenital or acquired.

The acquired varieties may be divided according to Lovett into those due to—

(1) Anatomical, physiological, or other asymmetries elsewhere than in the spine.

(2) Pathological affections of the vertebrae.

(3) Pathological affections of the bones and joints of the extremities.

(4) Distorting conditions due to disease of the soft parts.

(5) Habit or occupation.

In the acquired varieties it is well to differentiate between those due to pathological affections of the vertebrae and those which are symptomatic of an extra-vertebral affection or habit or occupation.

From the standpoint of treatment, the most important form of scoliosis due to a pathological affection of the vertebrae is that due to Pott's disease. Cases of lateral curvature accompanied by pain, especially if this is aggravated by motion, should be kept under observation until Pott's disease may be surely excluded, because in these, rest, not treatment, is required.

Treatment.—The aim of treatment in both the congenital and

the acquired forms of scoliosis is the substitution of a correct for a faulty attitude.

Treatment may best be divided into that of functional or transitory curves and that of structural or fixed curves.

(1) Functional curves are best treated by gymnastic exercises. Such exercises are employed in the treatment of both forms of scoliosis, firstly, to loosen up the curved portions of the spinal column, where such is necessary, and thus to make possible the attainment of an improved position; and, secondly, to aid in retaining the improved position by increasing the strength of certain groups of muscles as well as the general tone of the muscular system.

(2) Structural curves. While functional curves are best treated by gymnastic exercises, it is unreasonable to expect gymnastic exercises to straighten marked or severe curves due to change in the shape of the vertebrae, but such exercises will render pliable a more or less rigid spine preparatory to instrumental correction, or when more efficient measures have been employed, gymnastic exercises will tend to make permanent the gain secured by other measures.

For the reduction of structural curves, then, more dependence is to be placed on instrumental reduction, followed by the maintenance of such reduction by the use of plaster of Paris.

Correction is brought about by pressure on the spine when the patient is placed in the flexed position. Pressure is used to correct, first, the lateral deviation, and, secondly, the rotation. It is useless to attempt to correct the lateral deviation alone. If we attempt this, we increase the rotation. Further, it is useless to attempt to correct the rotation alone. If we do this, we increase the lateral deviation.

Let me repeat: Severe cases are best treated by forcible correction, preceded by gymnastic exercises, or any other method of stretching and rendering lax the ligaments and soft parts. The forcible correction must relieve both the lateral curvature and the rotation. The correction must be maintained by fixation in plaster of Paris.

The theory of the permanency of any such correction is based on Wolf's law, just as was the theory of the structural deformity.

The Weak or Flat Foot.—The most common deformity seen by the orthopaedic surgeon is the weak or flat foot.

Whitman has said that the function of the foot is to bear the weight of the body and to serve as a lever for its work.

"When the foot ceases to act as a lever it loses the support and control of the muscles which have balanced the weight in its proper relation to it, and the attitude of passive support must be assumed, in which the burden falls upon the inner side and the

strain upon the ligaments. Whether this attitude is voluntarily assumed, or whether it is forced upon the foot, the disuse of function and the mechanical disadvantages to which the foot is subjected, predispose to weakness and deformity."

Further, the same observer has said that flat foot when fully developed is practically a dislocation, in which the astragalus has slipped downwards and inwards from the remainder of the foot to which the muscles a . attached.

Flat foot is simply a further development of weak foot, and this is simply an exaggeration of a normal attitude.

The term "pronated foot" is used to describe a foot rotated at the calcaneo-astragaloid joint. It is really an early stage of flat foot; that is, while there is yet no actual dislocation of the astragalus, this bone may, and probably does, bear an abnormal relationship to the other tarsal bones.

The symptoms of this condition are a sagging of the internal malleolus and a seeming adduction of the whole foot. The sagging of the malleolus is due to a rotation of the whole leg on the foot. The arch is not apparently affected in a purely pronated foot. This variety is never rigid. The term valgus is used to denote a foot in which, in addition to abduction of the foot, a lowering of the arch and prominence about the position of the scaphoid is seen. This variety is often rigid.

Nearly all orthopaedic surgeons have contributed to the literature of the subject of the weak and flat foot. Amongst the most important of these contributions are those of Lorenz, Hoffa, Ellis, and Whitman.

As the space at my disposal is limited, I shall confine my attention to the most practical consideration of the subject of the weak or flat foot, that is, its treatment. This, to my mind, can be best considered by adopting what is really the classification of Osgood, of Boston, and considering the treatment advisable in each class.

Hoffa concluded in his study of the affections of the foot that of the acquired forms of flat foot, nearly 90 per cent. may be described, because of their method of origin, as of the static variety, consequently, our attention may be most profitably devoted to this variety alone. This, the so-called static variety, may primarily be divided into two classes (1) the flexible, and (2) the rigid. These will now be considered separately.

(1) *The Flexible Variety.*—In the majority of cases, this class represents simply an over-strain. This strain is accompanied by little or no muscular spasm.

This class may be subdivided into (a) simple weak, and (b) pronated feet.

(a) *Simple Weak or Relaxed Feet.*—Here the longitudinal arch without weight-bearing is normal for the individual, and here pronation is slight. Pain, perhaps referred to the calves, and discomfort are the chief symptoms. They are usually easily corrected and never need operative treatment. Here the patient should be taught to walk in such a way that his feet are spared all strain. His attention should be drawn to the leverage action of the foot, and exercises should be prescribed to strengthen especially the tibiales, as the most important muscular supports to the arch.

The patient should be directed to wear boots that are made to fit his feet, and which should be heavily soled and have a low, flat heel.

No brace is necessary or advisable, but the arch may be supported for a time by strapping with adhesive plaster, as suggested by Whitman.

(b) *Pronated Feet.*—Here pronation (shown by an apparent sagging of the internal malleolus and an eversion of the foot, which brings the line of weight-bearing too far to the inner side) is the essential feature. The longitudinal arch is depressed, principally on weight-bearing.

Exercises are the most important factors in the treatment of these cases, although the above treatment also should be prescribed. In addition to this, a Thomas heel should be suggested, or perhaps a temporary brace of celluloid or of spring steel of 21 to 26 gauge is employed. A rigid brace is not advised.

(c) *The Pronated Valgus Foot.*—In this class the longitudinal arch is depressed both with and without weight-bearing. The arch may be tender to plantar pressure, and here, also, eversion is most marked.

The rigid support is nearly always necessary in these cases to prop up and support the relaxed arch. This should gradually be raised until the normal is reached, when it may be substituted by a spring brace, which should be used during those times when the feet are subjected to but little weight-bearing, the rigid brace being retained at other times. The treatment suggested in (a) should also be maintained, and it is advisable to seek some correction and relief of pain and tenderness before employing the brace by the use of manipulation and strapping with adhesive plaster.

(2) *Rigid Feet.*—In studying this condition, we must first discover the cause of the rigidity. Let us ascertain whether it is due to muscular spasm, muscular contracture or adhesion. Often it may be necessary to employ an anesthetic to find out. When rigid through muscular spasm, although the deformity be corrected, the spasm tends to recur. This muscular spasm is probably due to reflex action. The types of rigid feet may best be named: (a) the

peroneal type, (b) the contracted muscular type, (c) the fibrous adhesive type, (d) the bony adhesive type.

(a) *The Peroneal Type.*—Here the foot is rigid through spasm of the muscles, and especially of the peronei. These, on attempted inversion of the foot, stand out in a position of extreme tension. The arch is often quite high. There is less likely to be disturbance of the circulation in this than in the other forms of rigid valgus. There is usually marked pronation. The scaphoid is rarely unduly prominent. The peroneal spasm is, as has already been inferred, probably of reflex origin. Under an anaesthetic it disappears, although the peronei may be congenitally or relatively normally shortened, this condition being demonstrated by muscular spasm. In this class probably belong most of those patients who have in the past resisted all forms of treatment. All surgeons who have been interested in valgus have experienced failures in the treatment of certain patients. Perhaps a brace has been used with results detrimental to the surgeon's reputation. Possibly the deformity has been corrected under an anaesthetic and placed in plaster of Paris in a position most satisfactory to the operator, and yet a recurrence has followed.

The treatment of this condition is peroneal resection, although this, to my mind, cannot be defended on theoretical grounds, practically it seems to be the only efficacious measure in some cases. This type has been studied principally by Mr. Robert Jones, of Liverpool, and in his hands the resection of three-quarters to one inch of the tendons of both peroneals with the destruction of their sheath at the place of resection, has been followed by most satisfactory results.

(b) *The Contracted Muscle Type* and (c) *the Fibrous Adhesive Forms* may be considered together except as to treatment. In the first type tenotomies are necessitated. Division even of the tendo-achilles being performed in some cases to assure proper correction, whereas in the second type wrenching is usually all that is required primarily.

In these there is inability to invert at the mediotarsal joint. The arch is usually low. There are usually signs of passive congestion, and there may be oedema. Flexion and extension are free. Attempts to passively invert are followed by pain and resistance. The latter may usually be overcome and the foot over-corrected by tiring out the muscles which are spasmodically contracted. If this is impossible, even under an anaesthetic, the adhesions must be more forcibly broken down by manual manipulations or by the use of the Thomas wrench, and the patient's foot put up in a position of extreme inversion in plaster of Paris. Osgood has suggested that the plaster is best removed in twenty-four to forty-eight hours. The foot at first gently, and later vigorously, manipulated,

and then returned into its plaster splint. Within a week active exercises may be begun. Massage is most useful in such cases. In the past, it has been the custom to leave the plaster of Paris intact for some weeks, but surgeons now have more generally adopted massage as a curative agent of prime importance in many of even the acutest lesions, such as fractures, ligamentous ruptures, and inflammatory exudations.

The secondary treatment indicated is the application of a well-fitting rigid brace of the class suggested by Whitman, of New York, and made from a cast taken of the foot early after correction. This must be used for some time in conjunction with the treatment suggested for simple weak feet.

(d) *Bony Adhesive Type.*—The diagnosis in these cases is made by the history of a long-standing deformity which is more or less irreducible even by wrenching under anaesthesia. In the hands of Painter,* of Boston, excision of the scaphoid has been followed by excellent results in such cases.

The routine treatment suggested is an attempt under an anaesthetic, to manually or instrumentally better the position; failing in which the scaphoid may be excised with the object of decreasing the length of the inner border of the foot. This excision is to be followed by wrenching with the Thomas wrench. The feet are then kept in the position of extreme correction in plaster of Paris for at least six weeks; subsequently a rigid foot brace is employed in conjunction with routine methods for strengthening the feet.

In conclusion, I would say that pain should be our indication for operative interference. Absolute sinking of the arch without pain rarely calls for interference.

Deformities Due to the Paralyses.

We shall consider here only the most common forms of paralyses and the deformities resulting.

Brachial, Birth or Obstetrical Paralysis.—Perhaps the most frequent cause is traction, which may stretch or rupture a part or parts of the brachial plexus. The fifth and sixth nerves are the most frequently affected, but the whole plexus may be involved.

The whole arm of the affected side is held in a characteristic attitude. There is internal rotation and adduction of the arm and forearm, extension of the forearm on the arm, and the hanging of the arm due to inability to raise the shoulder. There is commonly a paralysis of the deltoid and supra-spinatus; the biceps, brachialis anticus, supinator longus, and the supinator brevis.

The unopposed action, then, of the following muscles is responsible for the following deformities: The unopposed action of the

* Vide *Boston Medical Journal and Surgical Journal*, August, 1905.

pectoralis major causes abduction. The unopposed subscapular causes internal rotation, which, however, is also due to the action of both the latissimus dorsi and the teres major. Paralysis of the supinator brevis and biceps allows of pronation. The extension of the forearm is due to weakness or paralysis of the flexors, such as the biceps and brachialis anticus.

Treatment is altogether unsatisfactory. Certain of the milder cases seem to improve greatly themselves. Some improvement can be hoped for in nearly every case during at least the first twelve months of life, even without treatment.

Active treatment may be divided into (1) Treatment by electricity and massage. (2) Muscle shortening, as suggested by Mr. Robert Jones, and (3) Operative procedures.

Palliative treatment, as suggested (numbers 1 and 2), may be persisted in for some time, but the study of these paralyses by Doctors Clark, Taylor, and Prout, suggests that a period of one year is sufficient to test the permanency of the lesion, after which time the question of operative interference suggests itself. Operation here is theoretically advisable. The excision of the permanently injured parts of the brachial plexus, with the suturing of the cut ends, is rational, but I have not been able to convince myself, either by an examination of the cases presented by Dr. Taylor, or by the results reported, of the practical advantage to be derived from interference, although strong measures would seem to be justifiable in dealing with so grave a lesion.

Cerebral or Spastic Paralyses may be considered under three headings—Hemiplegia, Paraplegia, and Diplegia.

Hemiplegia, *i.e.*, a paralysis of one leg and one arm, is usually an acquired deformity, although in childhood it is usually acquired before the first year. Rupture of a cerebral vessel during a convulsion is, probably, the most frequent cause. Paraplegia, *i.e.*, the paralysis of both lower extremities, and diplegia, where we see a paralysis of both legs and arms, are usually congenital conditions, and are most frequently due to the use of instruments or to a difficult labour. These deformities are most frequently accompanied by disordered cerebration.

Treatment.—Much can be done in the milder forms, and, indeed, in some of the gravest, by tenotomies of contracted tendons and myotomies. I know of few classes of patients where the surgeon can get more satisfactory results in even bad cases when the patient may have extreme equinus, scissor gait through adductor spasm, flexion at the knees, even accompanied by defective cerebration. The majority of these patients can, by operative procedures and by tenotomies, be enabled to walk, and the ability to walk seems to give new confidence to the little patient, and the chance

of scene made possible by the new abilities, sharpens and improves his or her intelligence.

Transplantations also are of service. In the case of extreme pronation of the forearm, the conversion of the pronator radii teres into a supinator is often of benefit. Flexion of the hand can be combated by the method of muscle shortening, suggested by Mr. Robert Jones.

Anterior Polio Myelitis.—The etiology of this affection is still obscure. Many regard it as of bacterial origin. The pathological findings show that the lesions are probably dependent on an acute inflammation, causing a secondary destruction of nerve cells of the anterior cornua. The paralyses in this condition are of the flaccid variety. The distribution of the paralyses follows no rule. The lower extremities are most frequently affected. The paralysis may affect the body. When such paralysis occurs the muscles of the back are the most frequently affected. The muscles of the lower extremity are usually stated to be involved in the following order of frequency: (1) The peronei; (2) the extensors of the toes; (3) the quadriceps; (4) the tibiales. In the arm the muscles most frequently attacked are the deltoid and the shoulder group.

The treatment of the deformities resulting from this affection may be thus classified: (1) Education; (2) Tenotomy; (3) Tendon transplantation; (4) Arthrodesis; (5) Nerve transplantation.

When a sufficient length of time has elapsed to warrant the belief that no further regeneration can be expected, active treatment may be considered.

It is surprising how much can be done in the early stages by educating the patient to use the muscles which are not wholly paralyzed, and, in the case of deformity, to use the muscles affected by a pseudo-paralysis. Tenotomy should rarely be required if treatment, preventative and curative, has been persisted in during the early stage. This procedure is often required, however, for deforming contractures of a later date of origin.

The most common deformities resulting from this affection are of the foot, viz., Talipes equinus, due to paralyses of the extensors; talipes calcaneus, due to paralyses of the calf muscles; talipes varus, due to paralyses of the peronei; talipes valgus, due to paralyses of the tibiales.

In the treatment of any of these deformities, the first consideration must always be whether the condition is a fixed deformity, *i.e.*, whether the deformity is the result of persistent malposition acting on the bony structures and deforming them, or whether the deformity is the result of a stretching, a contraction, or a stretching and a contraction of any group of muscles or opposing groups of muscles. In the first class of cases, it is doubtful

whether any operation or means of treatment, which falls short of osteotomy or arthrodesis, will suffice, but in the second group it is quite frequently unnecessary to do more than tenotomize or transplant or, perhaps, combine the two procedures.

Paralyses of the muscles controlling the knee joint are dealt with more especially by transplantations and tendon lengthening. The transplantation of the sartorius and even the flexors of the knee have been made possible by such methods as lengthening by silk strands, as suggested by Lange. It is well to mention here, however, that tendon transplantation quite frequently acts more especially by changing what was a power for positive evil into a power for negative good.

In paralyses of muscles about the hip joint, the frequent escape of the psoas and iliacus has often been commented upon. That these should frequently escape is fortunate, because, if these muscles alone retain their function, it seems possible to assure some means of voluntary locomotion in the majority of cases.

Many of the deformities resulting from paralyses of the muscles of the upper extremity can be improved by Thomas' method of muscle-shortening. For others, tendon transplantation is indicated. In others, muscle transplantation has been successful.

Before leaving the subject of the deformities resulting from anterior poliomyelitis, let me say that, within the past twenty years we have witnessed the dawn of hope for those afflicted by these deformities. It is surprising how much can be done for even those who are apparently the most hopeless cripples.

Deformities Due to Rickets.

Rickets is a constitutional disease due to improper hygiene and feeding. It usually begins between the ages of six and eighteen months. It is accompanied by general manifestations, but the most marked and characteristic changes are found in the bones; these consist in a diminution of the earthy substances and in overgrowth of osteoid tissue.

Erichsen says, that the essential features of the morbid processes are, first, an exaggeration of the processes immediately preparatory to the development of true bone; secondly, an imperfect conversion of the preparatory tissue into true bone; and, thirdly, a great irregularity of the whole process.

The deformities for which the orthopaedic surgeon is most frequently consulted are those of the lower extremities and spine.

Treatment.—General treatment, such as hygiene and a proper diet, are most important during the acute stages of this disease.

Deformities of the Spine.—The most common deformities of the spine, due to rickets, are kyphosis and scoliosis.

The kyphosis of rickets must be differentiated from that of Pott's disease. This is done by the fact that the kyphosis in rickets is but one manifestation of a general disease. Muscular spasm is not so marked in a rhachitic deformity, and fixation is rarely present.

Early kyphosis is best treated by recumbency on a Bradford frame, or one of its modifications. Later cases may be treated much as is done in Pott's disease.

Scoliosis due to rickets is often severe. Mild, early cases may be treated as the early cases of kyphosis, but the later cases seem to be especially suitable for forcible reduction with retention in the position of correction.

Deformities of the Extremities.—The surgeon is rarely called upon to treat patients suffering from rhachitic deformities of the upper extremities, but is quite commonly called upon to do so in deformities of the lower extremities.

The deformities for which the patient is most commonly brought to the surgeon are knock-knees, bow-legs, and anterior curvature of the tibia.

Early cases of both knock-knee and bow-legs are best treated by braces, but it is useless to attempt the reduction of such deformities by these measures in the later manifestations of this disease.

It has been arbitrarily said, that braces should not be prescribed after the child attains the fourth year. This may be taken as a rough rule of procedure, but there are other indications of the uselessness of non-operative treatment besides age, such as the stage of the disease causing the deformity, the repair that nature has attempted and the hardness of the bone at fault must be considered.

The Operative Treatment.

Knock-knee.—The operative treatment of knock-knee is now to be considered. Several methods have been used, but, from our point of view, osteotomy alone should be considered. At the hospital for the Ruptured and Crippled the femur is incised with a chisel about one and half inches from the external condyle, and there bent into normal position manually. In Liverpool, Mr. Robert Jones saws through the femur at about the same position.

Both operative procedures are equally efficacious. After osteotomy, the American surgeon usually employs plaster of Paris —the English surgeon splints. Plaster of Paris is to be preferred under some conditions and splints under more favorable conditions.

Bow Legs.—The operations devised for the relief of bow-legs, can, for our purposes, be divided into osteotomies and osteoclases.

Osteotomies are frequently performed. Such is done with a chisel or osteotome through the tibia at the centre of the curvature. The fibula is then bent with the leg into normal shape, or is broken. In young children manual osteoclasis is sufficient. In those a little older, osteoclasis by bending or producing a green-stick-fracture over a wedge is better, and in the oldest an osteoclast may be necessary for those who prefer the so-called bloodless surgery. Of osteoclasts many may be described, but, perhaps, the simplest is that of Thomas, although that of Grattan is perhaps the most powerful.

In deciding upon what particular form of treatment should be employed in the treatment of a patient suffering from bow-legs, the position of the bowing must be considered, as well as the age of the patient and the primary cause and its duration. It is unwise to treat all patients with braces, by open incision and the chisel, or by osteoclasis.

Anterior Curvature of the Tibia.—In the early cases, braces are of only doubtful benefit, and in the later cases operative procedures alone offer relief.

If the deformity is progressive the tendo-achilles should be carefully examined with a view to lengthening it if it is felt that it is an etiological factor in the retention of the deformity. The operative treatment of marked deformities following the active stage of rickets is less favored in England than among American orthopaedists, and should only be undertaken if especially indicated. I have seen good results follow the removal of a wedge from the tibia, and, in some cases, a lateral osteotomy alone may suffice.

ON THE CHOICE OF A CLIMATE.*

BY GEORGE D. PORTER, M.B., TORONTO.

ALTHOUGH Oliver Goldsmith was more famous as a poet than as a physician, yet one can find nothing written elsewhere so suggestive upon the choice of a climate as are his familiar lines:

"But where to find that happiest spot below,
Who can direct when all pretend to know?
The shuddering tenant of the frigid zone,
Boldly proclaims that happiest spot his own,
Extols the treasures of his stormy seas,
And his long nights of revelry and ease;
The naked negro, panting at the line,
Boasts of his golden sands and palmy wine,
Basks in the glare, or stems the tepid wave,
And thanks his gods for all the good they gave.
Such is the patriot's boast, where'er we roam,
His first, best country ever is at home."

The virtues of many health resorts, as represented in their alluring literature, are so unlike the places themselves that one is led to believe that these glowing accounts are due to the "patriot's boast," aided, possibly, by a most natural desire for an influx of visitors and their helpful coin; but even when the spot is as beautiful as pictured, the fact remains that too often for the health-seeker "the country blooms a garden and a grave."

When the enquirer turns, on the other hand, to the scientific works on climatology for more accurate information, he is too often discouraged in his search by the bewildering array of meteorological statistics which fill their pages, for these figures relating to the mean annual temperature, mean annual rainfall, the number of cloudy days per annum, and the direction and velocity of the winds, can convey nothing to the general reader who is unacquainted with the corresponding statistics of his own locality, with which he is supposed to compare them.

When we speak of the weather we refer in general terms to the temperature, the humidity, the motion and the purity of the atmosphere, and the climate of a place may be called its condition in relation to these during the course of a long period of time. Without discussing the various factors which affect the climate, such as latitude, altitude, distance from the ocean and other large bodies of

* Read at a meeting of the Canadian Medical Association, Ottawa, June, 1903.

water, it is well to remember that no one of these factors alone is sufficient to account for the climate of a place. If such were the case we should not see fur coats being worn in Ottawa at the same time of the year that rubber ones were being worn in Vancouver (a city which is farther north than the Capital). The presence of mountains, the quality of the soil, vegetation, and large centres of population all have an effect upon the climate. We "can anticipate, however, from the geographical position and natural features of a place what its climate is likely to be by comparing it with some other relative place whose climate is already known."

Although there are practically no perfect climates for the invalid all the year round anywhere, yet "a good climate is one characterized by frequent moderate variations in the temperature," for such variations stimulate the vital functions and increase the resistance to disease. As we have a variable climate in many parts of Canada, one may well ask, Why not remain at home? For the healthy, and for those invalids who are able to respond to the increased demand for heat production during the winter months, there are probably no better climates, but for those whose vitality is too low to withstand "the marked weather changes within short periods," which we so often experience, a temporary change at least is sometimes desirable. Then again, there are but few inducements during the cold weather for a patient to remain out-of-doors, and his desire for fresh air and out-of-door life ought to be stimulated by outside attractions rather than by lectures on hygiene. The convalescent, too, and the neurasthenic find it very difficult to avoid worrying over the state of their business as well as the state of their health while they are in the vicinity of the one and among friends who, through mistaken kindness, are constantly enquiring about the other.

"If it be a good thing, however, for a sick man to change his residence, it must be a proper thing for him to know what it is that he is avoiding and what it is that he is to acquire," says Scoresby Jackson, and when such is done it will be found that very often one can alter his environment without changing his location, and that if he will properly utilize his own climate he may recover his health without leaving home. If he will give up the strenuous city life, with its late hours, crowded cars, ill-ventilated public buildings, (and private ones, too), live as much as possible out-of-doors, and take proper care of himself, he will receive a large share of the benefits which a change of climate would otherwise have given him. Many a man blames the rise and fall of the thermometer for his failing health, when the rise and fall of the stock market have had far more to do with it. Most of us know of some invalid who has gone to Colorado, changed his mode of life, and recovered his health, and then attributed it all to the climate, when he might have

been cured much easier and at less expense by hieing himself to the pure air and the simple life of the country in his own neighborhood.

If one intends to go away, however, it is a great mistake putting off the journey until the patient is too ill to properly undertake it. One should also have some knowledge of the place to which he is going, of the treatment to which he will be subjected while there, particulars as to accommodations and rates, and also, if possible, a letter to some reputable physician in the place, whom he can consult; for, after all, it matters little to the health of our patient how high a resort may be above the level of the sea, how many sunshiny days it may have, and how little rainfall, if he is unable to procure good, nourishing food, pure water, suitable accommodation and proper care. Then, in choosing a climate, we must consider our patient as well as his disease, his temperament as well as his temperature, his purse as well as his pulse; ascertain whether he will have to seek employment or whether he has means of support, and also whether he intends to remain away permanently or purposes to return.

The various health resorts (or regions which are generally known as such) may be classified under the heads of Coast, Inland and Mountainous Inland Climates. The warm coast climates (including small islands and marine) are, as a rule, equable and have a considerable moisture, and they might be described in one word as sedative climates. Such are to be found in the West Indies (Cuba, Jamaica and Porto Rico), the Bahamas (Nassau), Florida (St. Augustine, Daytona, Palm Beach and Miama, etc., on the East coast, and Tampa on the West coast), the Bermudas, Canary and Madeira Islands, Southern Italy, Algiers and Sicily. These are comfortable winter climates for delicate old people, and are of benefit in cases of tardy convalescence, neurasthenia, and chronic bronchitis. In advanced phthisis, diabetes, and also in many cases of heart disease, a winter spent in such climates will soothe the patients and protect them from the trying cold at home. The disadvantage of a residence in them is the tendency to digestive disturbances, especially if one is not careful to avoid the heavy items on the menus so often provided at the hotels. Then there is a noticeable loss of vigor (especially in the more robust patients) if they remain there too long. (The mistake must not be made, however, of returning home before the mild weather sets in, and, although we often have a mild April in Ontario and in Quebec, yet it is only mild as compared to the passing winter, and for the delicate person who has spent the winter months in the warm South the latter part of May is quite early enough for his return. The patient would do well also to break the journey by stopping off at one or two of the resorts on his way North. These warm climates are not to be advised for children, as they are too enervating for them, and the difficulty of obtaining fresh milk is a drawback.

Naturally, everyone has his or her own preference for some particular locality, but, without attempting to describe the attractions of the various regions, it may not be amiss to point out that of all those mentioned Florida is the nearest home, the best equipped with hotels and boarding houses, and these things make up in some degree for its lack of scenery and mental diversions which are to be had in some of the other places. If the weather should turn cool there (as it does at times even in Florida), one can cross over to Nassau in a few hours, where he can find a climate that for equability is unsurpassed.

The moderately warm coast climates, such as we have in the Southern coast of California (Los Angeles, Pasadena, Coronado Beach and Santa Barbara); also the Atlantic coast of Georgia and Carolina (Savannah, Charleston, Summerville, and Thomasville, a little farther inland); and in the French and Italian Riviera (Nice, Cannes, Mentone, Bordighera, San Remo, etc.), are not so relaxing as the warm coast resorts, and are much better suited for children and also for the more robust type of patients. Of these three regions, California has the advantage of a variety of elevation within a small compass, allowing of an all-year-round residence. The Atlantic coast resorts are much nearer home, and are, therefore, more suitable for a short stay. The Riviera, which is a stretch of beautiful coast line from two to four miles in width, running along the north shore of the Mediterranean from Toulon to Genoa, and protected on the north by mountains from two to three thousand feet high, has more variety of accommodation and at more reasonable rates than have the American resorts, and it also offers much more in the way of mental diversion. Its disadvantages (for there are those to every place) are the dust, the occasional strong winds and the sudden drop in temperature at sundown. This last is a source of danger to invalids, for, unless they are provided with suitable wraps, especially when driving, they are very liable to take a chill, ending frequently in an attack of enterocolitis. (There is no place in either Europe or in America where an overcoat is not needed at some time of the year, though this is not true in the islands already mentioned, and if one can accustom himself to the wearing of light woollen undergarments he will soon find that there is nothing so safe and comfortable, which can be worn all the year round everywhere. Many of the houses in the South are damp and cold, while many in the North are much too warm, and these differences between inside and outside temperatures are alone sufficient reason for the wearing of woollens, and if one tries to keep pace with the fluctuations of the thermometer by changing from woollens to cottons, and from them back again every time the erratic mercury goes up or goes down, he will always be in danger and in doubt, but if he will change only his outer garments accord-

ing to the weather he will save himself from a lot of trouble and worry, as well as from a number of otherwise inevitable colds.)

The mild coast climates, such as we have in the south of England (Brighton, Bournemouth, Torquay, etc.); along the Atlantic seaboard of America from Carolina to Atlantic City, and in British Columbia (Victoria and Vancouver), are all much cooler than the moderately warm coast climates, but, in spite of that, they might be classed as sedative climates. Of these, the Atlantic resorts have for us the advantage of being very much nearer home than the others, but they are unprotected from the winds. The Pacific resorts, though milder than the Atlantic ones, offer as yet but little inducement in the way of accommodations for the invalid, and they are expensive, while the English resorts have a great variety of accommodation at comparatively moderate cost, and, besides that, there are in many of them some natural protection from the cold north winds.

The cool coast climates, such as we have in Nova Scotia and Prince Edward Island, need not be mentioned here, as they are chosen for invalids only in the summer months, and no Canadian need leave his own country from May until November for more healthful and delightful climates.

The inland climates of moderate elevation (from 2,000 feet to 3,500 feet), such as we have in the plateau country of Texas, Arizona and New Mexico, and also in the foothills of Southern Alberta (Calgary, 3,500 feet), have a dry atmosphere, with a good deal of sunshine and moderately variable temperature. They are invigorating climates and tend to promote metabolism. Such are good places for tuberculous patients who are sufficiently robust to take exercise, but for the delicate patients who need care and attention they are not suitable. Besides their lack of good accommodations, a great objection to them is the frequent strong winds, with the dust, which is one of the drawbacks to nearly all dry climates.

The Okanagan Valley, in British Columbia (Vernon, 1,200 feet, and Summerland), is growing in favor as a health region. It has a mild, dry climate, well-drained soil, and its beautiful scenery, together with the opportunity it offers for fruit-growing, make it a very desirable place for those patients not vigorous enough to withstand the rougher life and stronger climate on the foothills. Kamloops (1,100 feet) also has much the same climate as that of Vernon.

The Carolinas (Pinehurst, Southern Pines, Camden and Aiken, in the sandy belt, and Ashville (2,300 feet) and Toxaway, in the higher regions), have a moderately dry, moderately variable climate and plenty of good accommodation for the invalid. The higher resorts have more beautiful scenery, but are damper than those in the sandy belt.

(In connection with the inland climates, it will not be necessary to mention the spas of Germany, France, etc., for they offer no climatic advantages over places found nearer home. Many of them are justly famous, however, as are those in different parts of the United States and Canada, for the special forms of treatment which one may obtain there, or for the baths or mineral springs in their vicinity. Egypt, too, is a great way off, expensive, and subject to occasional severe dust storms, and will not be considered here.)

Although the Highlands of Ontario (1,000 feet), Muskoka, Lake of Bays, Temagami, Georgian Bay, etc., are noted only as summer resorts, the fact that the sanitarium for consumptives in Gravenhurst, which is open all the year around, is having such splendid results shows that the winter climate here is not deleterious to this class of patients at any rate, and the time may not be far distant when our winter climate will be utilized for tuberculous patients as much as the very similar climates in Switzerland now are.

The air in these regions is very pure, moderately dry, variable, and the rocky soil allows of very quick drainage. They are in summer suitable for anaemic patients, asthmatics, and practically all pulmonary complaints, while hay fever patients find immunity from attacks while there. Good accommodations, from the high-class Royal Muskoka Hotel down to the plain but wholesome farm-house fare, are to be had.

The climate of the Laurentian Hills, and also of the Adirondacks, is very similar to that of these regions.

The Mountainous Climates of America are confined practically to regions along the Rockies, while those best known in Europe are in the Alps. They have cold, dry, still and very pure atmospheres, with a low barometric pressure. Such climates might be called stimulating. The effect of living in these high altitudes (4,500 feet and over) is to increase one's appetite, and the tissues seem to acquire an increased resistance to the action of micro-organisms. The patient gains in weight, and there is an expansion in lung capacity. Sleeplessness, however, is very common in such altitudes, and nervous patients, especially if they take too much exercise, do not do well there. Palpitation of the heart and difficulty of breathing affect others. "Strong constitutions, as a rule, bear mountain climates well, but feeble ones, who are defective in tissue change and in the production of heat, require warm climates, with shelter from the winds." Early cases of tuberculosis do well in high altitudes, even when there have been slight haemorrhages, but cases complicated with heart lesions or nephritis do not. A relapse is not infrequent with those who have improved in mountainous climates when they return to the sea level, and, therefore, a permanent residence in the higher altitudes ought to be considered before sending one there.

Davos-Platz (a valley ten miles long, at an elevation of from 4,500 feet to 5,400 feet), situated in the Alps, is one of the best known of the Swiss mountain resorts. It offers the advantage of protection from the winds, lacking in most mountainous regions.

Banff (4,500 feet) is practically the only Canadian mountain resort with first-class hotel and sanitarium accommodation.

Colorado (Denver, 5,300 feet; Colorado Springs, 6,000 feet) has a delightful mountain climate, and also plenty of accommodation. There is here a chance for a patient, able to do light work, to find employment or to practise his profession, as the case may be, making it, therefore, a desirable mountainous region for permanent residence.

Mexico City (7,400 feet) is a beautiful place, with a glorious mountain climate. It is also a very cheap place to live in, but, owing to the population being composed for the most part of Mexican and Spanish, many would not choose it for a place of permanent residence. Then the food one usually gets there is not appetizing, and its great distance from home is a serious drawback.

In summing up, it is safe to say that, "although one cannot recommend a particular climate for a particular disease," yet a man with Bright's disease would do best in a warm, dry, inland climate protected from winds; catarrhal and rheumatic patients would do best in dry climates where there is not too much variability of temperature. Patients with heart disease, advanced phthisis, chronic bronchitis, diabetes or neurasthenia, might safely choose, at least for the winter, a sedative coast climate. A temporary residence there also helps tide over the severe winter months for delicate old people and children, while convalescents often recuperate in those regions more quickly than they would at home.

Most cases of tuberculosis do best in the invigorating inland climates. Early cases of tuberculosis also do well in the stimulating mountain resorts. "If safety lies in a middle course," advises Solly, "when in doubt, choose the Inland climates rather than the Coast or Mountainous ones."

Of the various regions mentioned, it may be said in a general sort of way that the western part of America offers a great variety of elevation within a short distance, allowing of an all-year-round residence, and it also offers probably more chances of a man's earning his living than the eastern resorts do. The latter, however, have the advantage of being much nearer home, and also of affording better accommodations. The European resorts offer more inducements in the way of mental diversions than do the American ones, and they also have the best accommodations at the most reasonable rates. Remember that "far-off hills are always green," and before choosing some place a long way off recall the advantages of those which are nearer home. Also advise your patient to settle

down in some one place rather than to keep travelling from one to another.

For the strong and healthy travel is a recreation and a delight; it refreshes the jaded man and takes his mind from off his cares, but for the sick it is altogether a different matter. The frequent change of food and water, the fatigue of travel, the infected sleeping cars (especially those in the South) are all sources of danger. The lot of the "Weather-Chaser," as the travelling invalid is called, is not always a happy one, and Robert Louis Stevenson, who himself came under this class, well expressed it when he said: "Our taste for the beauties of nature is essentially capricious, and especially is this so with invalids, who, after the excitement of the journey is over, gradually become disenchanted; then comes the worst of all sickness—the longing for home."

Gentlemen, a man with wealth may buy his way; a man with health may earn it, but the man without either, who will have to be dependent upon the attentions and the good-will of strangers, would do well not to travel too far, and from my observations of a large number of health resorts on both continents I am convinced of the truth of that old adage that—for the sick man, the man who needs the care of friends and a physician—"East, West, hame's best."

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455 Huron Street.

Selected Articles.

RUDYARD KIPLING'S SPEECH TO THE GRADUATES AT MIDDLESEX HOSPITAL, LONDON.

"*Gentlemen,*—It may not have escaped your professional observation that there are only two classes of mankind in the world—doctors and patients. I have had some delicacy in confessing that I have belonged to the patient class ever since a doctor told me that all patients were phenomenal liars where their own symptoms were concerned. (Laughter.) If I dared to take advantage of this magnificent opportunity which is now before me I should like to talk to you all about my own symptoms. However, I have been ordered—on medical advice—not to talk about patients, but doctors. Speaking, then, as a patient, I should say that the average patient looks upon the average doctor very much as the non-combatant looks upon the troops fighting on his behalf. The more trained men there are between his body and the enemy, he thinks, the better. (Laughter).

Fight Against Death.

"I have had the good fortune this afternoon of meeting a number of trained men who, in due time, will be drafted into your permanently mobilized army, which is always in action, always under fire against death. Of course it is a little unfortunate that Death, as the senior practitioner, is found to win in the long run, but we non-combatants, we patients, console ourselves with the idea that it will be your business to make the best terms you can with Death on our behalf; to see how his attacks can be longest delayed or diverted, and, when he insists on driving the attack home, to see that he does it according to the rules of civilized warfare. Every sane human being is agreed that this long-drawn fight for time that we call life is one of the most important things in the world. It follows, therefore, that you, who control and oversee this fight, and who will reinforce it, must be amongst the most important people in the world. (Laughter.)

No Working Hours.

"It was long ago decided that you have no working hours that anybody is bound to respect, and nothing except your extreme bodily illness will excuse you in his eyes from refusing to help a

man who thinks he may need your help at any hour of the day or night. Nobody will care whether you are in your bed, or in your bath, or on your holiday, or at the theatre—if any one of the children of men has a pain or a hurt in him you will be summoned. And, as you know, what little vitality you may have accumulated in your leisure will be dragged out of you again.

Some Obligations.

"In all time of flood, fire, famine, plague, pestilence, battle, murder and sudden death it will be required of you that you report for duty at once, that you go on duty at once, and that you stay on duty until your strength fails you or your conscience relieves you, whichever may be the longer period. This is your position. These are some of your obligations, and I do not think that they will grow any lighter. Have you heard of any legislation to limit your output? Have you heard of any bill for an eight-hour day for doctors? Do you know of any change in public opinion which will allow you not to attend a patient when you know that the man never means to pay you? Have you heard any outcry against those people who can really afford surgical appliances, and yet cadge round the hospitals for free advice, a cork leg, or a glass eye? (Laughter.) I am afraid you have not.

Privileges of Doctors.

"It seems to be required of you that you must save others. It is nowhere laid down that you need save yourselves. That is to say, you belong to the privileged classes. (Loud laughter.) I am sorry you have met my demonstration with a certain amount of levity. May I remind you of some of your privileges? You and kings are about the only people whose explanation the police will accept if you exceed the legal limit in your car. On presentation of your visiting card you can pass through the most turbulent crowd unmolested, and even with applause. If you fly a yellow flag over a centre of population you can turn it into a desert. If you choose to fly a Red Cross flag over a desert you can turn it into a centre of population, towards which, as I have seen, men will crawl on hands and knees. You can forbid any ship to enter any port in the world. If you think it necessary to the success of any operation in which you are interested you can stop a 20,000-ton liner with mails in mid-ocean till the operation is concluded. You can tie up the traffic of a port without notice given. You can order whole quarters of a city pulled down or burnt up, and you can trust on the warm co-operation of the nearest troops to see that your prescriptions are properly carried out.

"To do your poor patients justice, we do not often dispute doc-

tors' orders unless we are frightened or upset by a long continuance of epidemic diseases. In this case, if we are uncivilized, we say that you have poisoned the drinking water for your own purpose, and we turn out and throw stones at you in the street. If we are civilized, we do something else, but a civilized people can throw stones, too. You have been, and always will be, exposed to the contempt of the gifted amateur—the gentleman who knows by intuition everything that it has taken you years to learn. (Laughter.)

Exposed to Attack.

"You have been exposed—you always will be exposed—to the attacks of those persons who consider their own undisciplined emotions more important than the world's most bitter agonies—the people who would limit, and cripple, and hamper research because they fear research may be accompanied by a little pain and suffering. (Cheers.) But you have heard this afternoon a little of the history of your profession. You will find that such people have been with you—or rather, against you—from the very beginning, ever since, I should say, the earliest Egyptians erected images in honor of cats—and dogs—on the banks of the Nile. (Laughter.) Yet your work goes on, and will go on.

Training Counts.

"You remain now, perhaps, the only class that dares to tell the world that we can get no more out of a machine than we put into it; that if the fathers have eaten forbidden fruit, the children's teeth are very liable to be afflicted. (Loud laughter.) Your training shows you that things are what they are, and will be what they will be, and that we deceive no one except ourselves when we pretend otherwise. Better still, you can prove that you have learned.

Result of Unheeded Warning.

"If a patient chooses to disregard your warning, you have not to wait a generation to convince him. You know you will be called in in a few days or weeks, and you will find your careless friend with a pain in his inside or a sore place on his body precisely as you warned him would be the case. Have you ever considered what a tremendous privilege that is? (Laughter.) At a time when few things are called by their right names—when it is against the spirit of the time even to hint that an act may entail consequences—you are going to join a profession in which you will be paid for telling man the truth, and that every departure you may make from the truth you will make as a concession to man's bodily weakness, and not mental weakness.

RESPONSIBLE PROFESSION.

"Realizing these things, I do not think I need stretch your patience by talking to you about the high ideals and the lofty ethics of a profession which exacts from its followers the largest responsibility and the highest death-rate—for its practitioners—(laughter) —of any profession in the world. If you will let me, I will wish you in your future what all men desire—enough work to do and strength enough to do the work." (Loud cheers.)—*Exchange.*

NOTES ON THE LACTIC FERMENTS, MORE ESPECIALLY THOSE INHIBITING INTESTINAL PROTEID PUTREFACTION.

BY KARL GOLDSTONE, JERSEY CITY.

Metchnikoff's "Nature of Man," his "Essais Optimistes," and "Quelques Remarques Sur le Lait Agri," and similar communications from other authorities, together with the astonishing facts as to the age attained by those races largely using preparations of sour milks, have brought the matter to the attention of the medical profession and general public of all countries. A review of the subject, therefore, is interesting, especially in view of the number of commercial lactic ferments which are now being brought to notice. Dr. Gardette (*International Therapeutics*, 1906) says: "Normally the intestine abounds with a microscopic flora composed of saccharolytic bacilli acting chiefly on the carbohydrates. Under certain conditions these saccharolytic bacilli are diminished in number and are replaced by the proteolytic microbes of nitrogenous putrefaction. This microbian substitution of antagonistic bacilli is the key to the etiology of intestinal auto-intoxication." In this discussion the value of lactic acid forming ferments as preventatives of auto-intoxication, and the prevention of arterio-sclerotic changes and premature senility, will not be considered at length. Suffice it to say that Metchnikoff's reasoning is based on the fact that protolytic bacteria proliferate in an alkaline environment with production of certain toxines, skatol, indol, etc., while Missier, Massol and Grigoroff have proved that the proteid-destroying bacilli are unable to live in an acid medium. We have, therefore, two methods at our disposal to combat intestinal auto-intoxication, *i.e.* (1) by rendering the intestinal area acid; (2) by introducing into the intestine bacilli directly antagonistic to those which attack the proteids.

The crude ferments which have been used for ages by Oriental races are very numerous; the best known are the maya of Bulgaria,

the leben of Syria, the ariel of North Africa, the cioddu of Sardinia and the various ferments used in India for making Dalh, ad hoc, all of which contain wild yeasts, bacilli and cocci, which give rise to fermentation and formation of lactic acid. Some of these are positively harmful, such as the streptococcus, while others, like the bacillus subtilis, are harmless, and most of them fortunately appear to be unable to resist destruction by the gastric juice.

Herter, Metchnikoff and Massol appear to have been the first to isolate and study the powerful Bulgarian bacillus which is able to reach the intestine and continue to proliferate in the intestine with production of lactic acid and inhibition in a great measure of the formation of indican by the colon bacillus and other proteid-destroying bacteria. This so-called "bacillus of Massol" persists in the feces for months in spite of the saprophytic bacteria with which it may come in contact. This is a great advantage, since, according to Cohendy (*Archives de la Societe de Biologie*, No. 17, 1906), the bacillus bulgaricus continues to proliferate for weeks in the intestine after cessation of the daily administration of fresh cultures, and so the prevention of putrefactive auto-intoxication is prevented once its growth is established in the gastro-intestinal tract. That the indican index and other symptoms of intestinal putrefactive changes are arrested is maintained by Herter (*British Medical Journal*, Dec. 25, 1907), Pouchou, of Lausane, and others.

The specific lactic acid ferments include a number of species, some of which convert all the sugar into lactose, and others only a certain proportion. Some bacteria curdle milk, others only partially, through the medium of enzymes, such as casease, while others again produce gases, aromatic principles, etc., so that when we consider the variable sources and quality of milks and the conditions which the various lactic acid ferments bring about, it is easy to understand the great irregularities in the standards of the buttermilks of various countries.

Another very important point is the vitality of this Bulgarian bacillus in the presence of pathogenic organisms, since when typhoid, cholera, and other bacteria are made in suitable culture media in conjunction with it, the bacillus of Massol alone is found to proliferate freely. This probably explains the immunity with which the mixed ferments, such as maya, Kefyr grains, etc., are used, since the sour milk resulting from their use, and the large amount of lactic acid resulting, kills such dangerous micro-organisms as the streptococcus. Piffard also found that the Bulgarian bacillus interfered with the growth of the bacillus typhosus, the administration of pure cultures of the Bulgarian bacillus of Massol, therefore, would appear to be indicated in the treatment of the intestinal symptoms of typhoid fever.

This Bulgarian acid bacillus is optionally aerobic and anaerobic,

and seems to adapt itself to feeding on the alimentary carbohydrates, and while it produces immense quantities of lactic acid (2.8 per cent.), the human economy easily decomposes of as much as 12 grammes daily when given by the mouth, this acid breaking up like most organic acids, into carbonic acid and water, which is easily explained by its chemical derivation from the hexoses. Tigerstedt states ("Physiology," page 297), that lactic acid is normally elaborated as a result of the action of the pancreatic juice and bacteria upon carbohydrates in the small intestine. Sour milk, owing to the presence of this vigorous bacillus, robs the proteid ingesta of its dangers, since putrefactive changes are delayed or inhibited, and the uric excess following faulty metabolism can thus be prevented.

Emerson (*New York Medical Journal*, Feb. 8, 1908) claims that not only is the process of carbohydrates and proteid disintegration occurring in the souring of milk with the Bulgarian bacillus greater, but the resulting lactic acid produced activates peptic secretion and digestion.

Lessge and Hayem long ago showed the useful action of lactic acid in cases of infantile diarrhoea, enteritis, and even in cholera.

In Paris it is claimed that the administration of the lactic ferment by the mouth gives as good, if not better, results than when buttermilk is administered ready prepared, and that milk need not of necessity be given at all.

It is, however, important that either the milk be inoculated with the biologically standardized bacillus or that special pure cultures only be given in tablet form by the mouth, which will outgrow pathogenic and putrefactive bacteria.

As has already been pointed out, many pathogenic and non-pathogenic bacteria will proliferate in a neutral or even acid media, even with production of lactic acid, so that a lactic acid ferment cannot be used indiscriminately, and here the difficulty is to select the ferments, since it is often impossible to differentiate them microscopically from harmless lactic acid-forming bacteria. Many cocci and bacilli, such as b. coli communus, b. oidium lactic (which also forms butyric acid in addition), b. prodigiosus, the bacillus of Friedlander, etc., not only give rise to lactic acid, but simulate the rod-shaped bacilli of the Bulgarian bacillus isolated by Massol, and some of them may produce the extremely toxic tyrotoxin, while others are capable of actually destroying the proteids; so that impure cultures may do serious harm.

The true Bulgarian bacillus of Massol, however, is the only one yet known to produce succinic as well as lactic acid, and, while it interferes with the formation of butyric acid and is unfavorable to the proliferation of some pathogenic cocci, bacilli and spirila, it does not entirely prevent the growth of bacteria such as the saccha-

romyces cerevisine and lactic acid-forming b. subtilis, b. oidium lactis, etc.

The maya ferment used in Bulgaria, for example, besides three useful bacilli mentioned, certain yeasts, and numerous other bacilli, some of which are certainly injurious.

Selected Lactic Ferments.—In order to obviate these inconveniences, scientific selection should be made to replace these natural ferments, and the bacillus of Massol is, therefore, usually selected because it is the most energetic producer of lactic acid, besides being very resistant. It is found in practice, however, that this bacillus, when isolated, not only brings about the coagulation of milk, but also attacks the fats, saponifies them too much, and communicates to the milk a disagreeable taste. Metchnikoff has found that this does not take place, however, when it is cultivated in company with another lactic bacillus. It is this principle which has been utilized for the preparation of fermenlactyl, the selected lactid acid ferment utilized in Paris.

Natural or boiled milk requires from six to seven hours for complete digestion, while, owing to the partial digestion of the casein and the conversion of a part of the fats by the lactic ferments, buttermilk needs only from three to four hours for complete assimilation.

To counteract the proliferation of pathogenic bacteria, yeast is largely used in the preparation of koumys, zoolak, etc., and the presence of some few cocci does not of necessity give rise to the harmful buttermilk. In this connection it is well to quote from the report of Bertrand and Gustava Weisweller (*Annales de l'Institut Pasteur*, December, 1906), of which the translation is as follows:

The Bulgarian ferment acts with a different degree of intensity on the principal substances contained in milk. The Bulgarian ferment hydrolyses nearly the whole of the sugar contained in the milk. It transforms next the glucose and the galactose resulting from this hydrolysation, into lactic acid. Next to the lactic acid (which easily attains 25 grammes per litre in volume), we find a little succinic acid (only about 1-2 gramme per litre) and a very small quantity of formic acid.

This Bulgarian ferment is the first real lactic ferment producing succinic acid. It is also the first example we have of a lactic ferment separating visibly the lactose before transforming it into an acid.

The commoner, quick-growing ferments which sour milk on exposure to the air, soon become exhausted, and a totally different class of ferment soon renders the milk alkaline. This is especially the case when pasteurized milk is used.

In conclusion, therefore, we see that certain lactic acid bacilli,

when carried into the intestines along with our food, continue to decompose sugary and starchy foodstuffs into lactic and succinic acids, which in their nascent state are endowed with considerable activity against the bacteria of putrefaction.

Clinical experience shows that these lactic acid bacilli exert (*a*) a local action on intestinal lesions (tuberculosis, etc.); (*b*) an antiseptic action on putrefactive processes; (*c*) a reflex action on the liver and pancreas, the normal secretions of which are increased; (*d*) a general tonic action on the whole organism, due to the lactic acid acting as such after re-absorption into the blood; (*e*) since 1 c.c. of sour milk prepared with the bacillus of Massol may contain as many as 500,000,000 living bacilli and the tablets of fermenlactyl immense numbers, it is only necessary to establish this bacillus in the intestine thoroughly, either by administering sour milk, or, when this is objected to by the patients, the fermenlactyl tablets themselves, to continue the proliferation of a healthy intestinal flora, which needs but small daily additions of these active lactic ferments to maintain this desirable condition.

We see, then, the importance of selecting pure cultures of these lactic acid ferments and not being content with the "say-so" of commercial laboratories of the mere production of the coagulation of milk by alleged lactic ferments.—*Exchange.*

SUGGESTED REVISION OF HIPPOCRATIC OATH TO CONFORM WITH PRESENT-DAY STANDARDS AND CONDITIONS

I swear by Apollo the physician, by Aesculapius, by Hygeia, Panacea, and all the gods and goddesses, that, according to my ability and judgment, I will keep this oath and stipulation: to employ whenever possible proprietary preparations; to abuse as far as may be the dispensing of medical charity; to obtain as many hospital appointments as possible and selfishly exclude all other practitioners from the benefits resulting therefrom; and to be ultraconservative in my attitude toward new truth. I will from time to time publish highly technical articles in the journals of medicine, in which abstruse, exceptional subjects of esoteric interest will be pedantically dealt with. I will adopt all feasible measures tending to unfit me for the practice of the art and be anything from the theologian to horseman except physician. From time to time I shall do my utmost to obstruct the course of justice in the courts of law, giving lying testimony on behalf of any cause offering the highest bid for my services as an expert witness. In all my professional work financial considerations shall stand first and the ideals of the Fathers last. I shall do a large amount of

unnecessary operating, especially upon women, and shall mulct such patients in fees. I will engage in laboratory work of recondite nature bearing no practical relation to the requirements of those afflicted with disease. As presiding officer of a medical society I shall make no attempt to seek out and exploit new talent, but shall repose the scientific programs therein offered in the hands of a clique, the Snodgrasses, Wellers, Winkles and Tupmans found in every medical Pickwick Club. While I continue to keep this oath inviolate, may it be granted me to enjoy life and the practice of my art, respected (?) always by all men; but should I break through and violate this oath, may the reverse be my lot.—*Exchange.*

THE ESTIMATION OF SUGAR IN URINE BY MEANS OF REAGENT TABLETS.

Medical practitioners and pharmacists called upon to do urine analysis, have long felt the want of a sufficiently accurate and yet simple method for the estimation of sugar, and it is to be hoped that the introduction of Merck's Reagent Tablets for the Estimation of Sugar in Urine, obviating the use of complicated apparatus and intricate manipulations, while affording satisfactory results, will prove a great convenience to the busy physician and pharmacist. As the tablets keep indefinitely, the errors resulting from the use of a deteriorated solution are also avoided.

The application of Fehling's test is the method underlying the use of the tablets, *i. e.*, that cupric oxide in an alkaline solution is reduced by glucose, when the two are boiled together. The components of Fehling's solution have been put up in two kinds of tablets, one containing the copper salt and the other representing the required amount of alkali.

The tablets are accurately dosed, and a solution prepared by dissolving one of each kind in water has a constant reducing-value standardized against 0.01 gramme of glucose. By using a solution of one of each kind of tablet and varying the amount of urine added, it is possible to determine the percentage of sugar present. For instance, if the urine to be tested contains 1 per cent. of sugar, 1 c.c. will completely reduce the copper oxide contained in a solution obtained from one of each kind of tablet; on the other hand, should the urine contain 0.1 per cent. sugar, 10 c.c. will be required to reduce the same solution.

Directions for Use.

Dissolve one copper and one alkali tablet in 2.5 c.c. of water and heat the resulting solution, as soon as it begins to boil add

2 c.c. of urine, and boil for one minute. After reaction has set in denoting the presence of sugar, filter, the color of the filtrate will serve as an approximate indication of the percentage of sugar present. Should the filtrate be yellow or brown, the urine contains more than 0.5 per cent. sugar; if, on the contrary, it is green or blue, less than 0.5 per cent. of sugar is present. Based upon these conclusions, the same test is repeated, but on the following lines: If the urine has been found to contain more than 0.5 per cent. of sugar, 1 c.c. is now added to the solution obtained by dissolving a pair of tablets; if, on the other hand, the preliminary test demonstrated the presence of less than 0.5 per cent. sugar, 4 c.c. of urine should be added. The color of the filtrate in this case is again an indication for carrying out another test on the same lines as the other two, as now it has been ascertained whether the urine contains over or under 0.25, respectively 1 per cent. of sugar. When the filtrate has a pale green color, due to a slight excess of Fehling's solution, the end point has been reached: the amount of sugar present in the quantity of urine employed to carry out the test corresponds to the cupric oxide contained in the test solution obtained by dissolving the pair of tablets. This result is usually obtainable by three or four tests; only in the case of a urine having a very high percentage of sugar will it be necessary to repeat the operations more frequently before arriving at an exact result. In this case it is advisable to dilute the urine with water 1:10 to ensure greater accuracy.

The following table shows the corresponding quantities of urine and percentage of sugar, based on the use of a solution obtained from one pair of tablets:

0.5	c.c. of urine employed	= 2	per cent. sugar
1	c.c. of urine employed	= 1	per cent. sugar
2	c.c. of urine employed	= 0.5	per cent. sugar
3	c.c. of urine employed	= 0.33	per cent. sugar
4	c.c. of urine employed	= 0.25	per cent. sugar
5	c.c. of urine employed	= 0.20	per cent. sugar
7	c.c. of urine employed	= 0.15	per cent. sugar
10	c.c. of urine employed	= 0.1	per cent. sugar

The use of the tablets will prove especially useful in cases of diabetes, where a daily control of the percentage of sugar has to be made for a long period, as here a single, easily performed test will suffice to show whether an increase or decrease has taken place.

Tablets for the determination of albumin in urine, according to Riegler and Esbach, are also obtainable.—*Exchange.*

COLD WATER AND RIGHT REASON

COLLEGE towns throughout Canada are having their troubles. Youth and high spirits simply will not behave like their grandsire carved in alabaster. In the pursuit of culture it seems almost inevitable that students shall tear down a certain number of shop signs, destroy a certain number of fences, make a certain amount of hideous din and horn-squawking, get into a certain number of fights, and have a certain number of their heads cracked by the police. Only thus and so can the full measure of sweetness and light penetrate the undergraduate system. It is also necessary to smoke a certain number of rank briar pipes and smell up the streets as one walks along. Without these accomplishments a college education can not be called liberal. All the learning is not between the covers of books. The face of human nature is worth conning, as the wise student believes and practises. At forty we are prepared to admit that alma mater taught us a great deal of slush, but we return thanks for the instruction we had from her in good comradeship. It was she, after all, that first rubbed off our corners and fitted us comfortably into the social scheme. We may forget our humanities, but we do not forget the humanity we got at college. And it is usually when cultivating the social instinct that college students get into trouble with the police, who do not understand what an important part it is of the training. The other day college students in Toronto commandeered a greengrocer's window, and pelted sober cits with onions and cabbages. This was outrageous, but natural. It was the social instinct. A college student by himself is a rational being. When he runs in packs he is a wolf. But he is all right at that—he and his little violences. The Toronto authorities are sensible enough when they refuse to take him too seriously. Student riots, hereafter, are to have the hose turned on them. This should be effective. Cold water thrown on the sizzling crowned heads of Europe would have averted many a bloody war. Cold water is a great aid to right reason. It should help the student quite as much as black coffee, hypophosphites, and wet towels, which are among the firmest supports of the human mind at examination time.—*Collier's.*

COMPLAINT is made that the beery atmosphere emanating from a brewery drives men to drink. Never thought of that. Suppose the sometimes perceptible perfume from a garage makes automobile thieves. Criminologists will now please get busy.—*Motor Print.*

Laryngology, Rhinology and Otology

IN CHARGE OF
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FOUL BREATH: ITS CAUSES, PATHOLOGY AND TREATMENT

ANDREW WYLIE (London) (*West London Med. Journ.*, Vol. 13, No. 2, April, 1908), in a very interesting paper tabulates various causes which conduce to breath foetor. He classifies the types of foetor as: (1) The putrefactive type; (2) the sulphuretted hydrogen type; (3) the garlic type; (4) the sweetish type; and (5) the toxic or hepatic type. He further classifies foetor breath according to the different regions responsible for its source, summarizing them thus: (1) Diseases of the nose and its accessory cavities, causing nasal obstruction and mouth-breathing; (2) imperfect deglutition; (3) oral and lingual affections; (4) diseases of the teeth and gums; (5) diseases of the tonsils; (6) chronic suppuration of the middle ear; (7) affections of the naso-pharynx; (8) diseases of the lung; (9) foreign bodies in the mouth, nose, pharynx, or larynx; (10) constitutional causes.

Some diseases of the nose cause a specially pronounced odour. For example, rhinitis sicca, which arises when the secretion is impaired or diminished in quantity and quality. A similar condition is found in atrophic rhinitis, where actual structural degeneration of the mucous membrane has taken place. Thus, in caseous rhinitis, where the pus and debris are charged with various forms of moulds, yeasts, and putrefactive bacteria, such as Aspergilla torulae and the bacillus butyricus, and in chronic diseases of the accessory cavities where pus is lodged in the maxillary antrum, or the ethmoidal, frontal, or sphenoidal sinuses, also in tertiary syphilis with necrosis of the ethmoid or vomer. In septal perforations, whether from operations, from tuberculosis, or syphilis, there is also foetor, and the same is found when polypi and sinusitis co-exist. Generally speaking, foetor may be present in any malformation of the nose which interferes with free discharge and proper ventilation.

Speaking of the constitutional causes, he mentions: (1) Gastro-intestinal derangements and dyspepsia, especially those which are associated with dilatation of the stomach. In patients troubled with severe chronic constipation there is a peculiar sickly,

almost faecal odour from the breath. Spirit drinkers have quite a different odour from beer drinkers; the former is of a vinegar type, while the latter have the characterstic smell of stale malt liquor. The breath of cigar and pipe smokers has a different smell according to the favorite form of using tobacco. (2) Different varieties of glycosuria cause a sweetish odour to the breath. (3) Menstruation always causes some change in the breath; in some individuals it is so pronounced that they can hardly mix with society during that period. (4) During lactation also in some patients there is a marked odour from the breath. (5) Drugs have a great influence on the breath, and it is one of the signs to watch for in their administration. Lead and mercury produce a well-known effect on the gums, and in extreme cases foetor. All preparations of sulphur cause a characteristic sulphuretted hydrogen smell of the breath. Copaiba and valerian have a cat's-meat smell, iodoform a rancid smell, and belladonna and opium diminish secretion and cause a dryness of the mucous membrane to which bacterial activity may be superadded. (6) Occupations have also a great deal to answer for as regards foul breath. Milkmen, or those continually working in milk, have a peculiar odour, owing to constant contact with the B. butyricus. The reason of this is probably the direct transference of the bacillus by the fingers to the nose with consequent rhinitis. The same theory applies to workers among skins and furs, who have a peculiar animal odour. Those who work with phosphorus, lead, or brass, have a peculiar metallic odour from their breath, which is associated with rhinitis and "spongy" gums. (7) Many nervous diseases cause an odour from the breath, such as is found in paralysis and apoplexy. The foul breath which frequently follows a hemiplegic attack is doubtless quite familiar. Mental dulness and physical disability prevents proper cleansing of the lips, teeth, and tongue; thus sordes accumulate and foetor is produced.

Dealing with the treatment of these conditions he points out that successful treatment of foetid breath depends first upon a clear recognition of the cause; secondly, on the persistent and thorough employment of the methods adopted; and thirdly, on the intelligent co-operation of the patient. Remedies to overcome foetor must not be taken in hand in a half-hearted manner; they must be persevered with most thoroughly, and the patient should be instructed in every detail of the technique, whether this includes a douche, spray, or insufflation. A mere temporising by the use of "deodorisers" only results in disappointment, if the fons et origo mali remains untouched. The chief aim in overcoming foul breath is to treat and remove the immediate cause, which is usually bacterial in origin, whether primary or secondary.

With the object of clearing away foetid accumulations in the n and naso-pharynx, "solvent" douches must be employed. It useless merely to employ antiseptics which do not possess t power of dissolving mucin, albumen, and the constituents of crus The best ordinary solvent is sodium sulphate (1 per cent. solution The nose should be thoroughly douched with this until the breat way is free from crusts and caseous matter. Antiseptics can b employed afterwards direct to the membrane by means of spray In mild cases, when the foetor is not severe, and when the muco membrane is still sensitive, the olfactory function not being de stroyed, an atomiser of liquid paraffin containing menthol, oil of cinnamon, or eucalyptus is preferable, but, if the foetor be very intense, Dobell's alkaline solution of phenol may be sparingly used.

Healthy secretion is restored by gentle stimulation. This can be done in mild cases by using a snuff composed of boracic acid with otto of roses, but when the disease is very atrophic and secretion scanty, 5 per cent. of lysoform should be added as a powerful stimulant and antiseptic. Sea water, boiled and decanted, forms an excellent douche, especially when combined with a visit to the sea air. The nasal and pharyngeal mucous membranes, except in cases of atrophic rhinitis, are very sensitive, and will not tolerate antiseptic solutions of anything like the strength and intensity which the mouth does. Densely hard crusts are painlessly removed by inhalation of steam, camphor being added to the hot water as a stimulant. To facilitate oral hygiene, solutions of lysoform (1 per cent.), sanitas, peroxide of hydrogen, etc., are most beneficial; permanganate of zinc (1 in 500) or zinc chloride (½ per cent.) is recommended in cases of "spongy" gums."—*Journal Laryngology.*

THE VALUE OF OESOPHAGOSCOPY FROM A DIAGNOSTIC AND THERAPEUTIC POINT OF VIEW.

CONTRARY to the usually accepted view that the oesophagus is a collapsed tube, the observations of the author with the oesophagoscope on the living subject, go to show that it is, for the greater part of its extent, an elongated fusiform cavity. Only for the first 4 cm. of its proximal portion and its terminal 2 cm. are its walls in apposition. This disposition of the tube is ascribed to adhesions binding its wall to adjacent structures and to the aspirating power of the thorax. After passing the oesophagoscope for 7 or 8 cm. into the gullet the fusiform portion is reached, and its wall can then be explored without contact with the instrument. Malignant growths, or the bulging of an aneurism, can thus be viewed at a

distance, avoiding all chances of perforation, as might occur with the ordinary bougie. The appearance of the upper and lower extremities of the canal presented by this method of examination is fully described; both the author and Killian consider them to be sphincters, closed except during deglutition, etc. As regards diagnosis, the writer is of the opinion that oesophagoscopy is the only method affording precise evidence concerning lesions of the oesophageal wall, or the position of a foreign body. Contrasting the superiority of this method with others at our dispsal, such as the passing of bougies and the use of bismuth emulsions with the fluorescent screen, the interesting point is noted that, from the fact that carcinomata are invariably associated with spasmodic strictures usually situated some 4 or 5 cm. above them, both the bougie and bismuth are, in such circumstances, arrested on the proximal side of the true lesion. With the oesophagoscope the true nature of the parts beyond are revealed. The value of the method in the diagnosis of foreign bodies is discussed. Subjective sensations as an aid to location are often misleading, and the X-rays frequently prove useless, either owing to the fact that many bodies do not arrest them, or difficulty may be experienced in truly interpreting the projection of the shadow of the screen.—*M. Guisez,* (*"La Presse Medicale,"* February 12, 1908).

SPECIMENS FROM CASES OF SARCOMA AND CASES SIMULATING SARCOMA IN THE UPPER AIR PASSAGES.

THERE is not infrequently a great deal of dissatisfaction and uncertainty with the pathological findings on tissue removed from the upper respiratory tract. A growth may clinically have all the evidences of malignancy, and yet the microscopic report may show it to be benign. On the other hand, an apparently simple and innocent mass may be reported as undoubtedly malignant. Those who report cases of malignant disease as having been cured by simple or new measures, should make sure, unquestionably so, that there can be no doubt as to the original nature of the disease, and it would be of very great advantage to give the pathologist's name. Those who have not been specially trained and have not had large experience in examining nose and throat tissue, should not be depended upon for a positive diagnosis.

Dr. Jobson Horne, in his reply to the discussion on this paper, spoke as follows: On a previous occasion he had expressed his opinion that sarcoma in the upper air passages was more often diagnosed than it existed, the regions lending themselves to the development of vascular neoplasms of an embryonic structure.

The historical findings often supported a diagnosis of sarcoma, whilst the clinical course of the case was that of an innocent neoplasm. Therefore a negative report on the question of sarcoma in these regions from a pathologist counted for more than a positive one, unless the pathologist were fully acquainted with the clinical facts of the case. By the elimination of the endotheliomata and the fibro-angiomata, the number of alleged cases of sarcoma had been reduced. The specimens exhibited were from types of cases, and served to illustrate those points. In each case the question of sarcoma was raised either by the pathologist or by the clinician. The cases came under observation as far back as ten to six years ago; he was therefore in a position to state the subsequent history in eight of the nine cases—which was innocent.—(*Proceedings from the Laryngological Section of the Royal Society of Medicine.* Vol. 1, No. 3, June, 1908).

THE KILLIAN FRONTAL SINUS OPERATION—ITS RELATION TO OPHTHALMOLOGY

LONGWORTHY, H. G., Dubuque, Iowa, (Ophthalmology, Oct. 1907), says that so radical a surgical procedure as the Killian frontal sinus operation should be understood by all ophthalmologists. The characteristics of such cases of inflammation of the frontal sinus as present eye symptoms are tumor just above the inner canthus, exophthalmos downward and outward, and little, if any, pain. Diplopia is not constant. The exophthalmos is due to the pus breaking through the inner wall of the orbit. The orbit swelling is found to be firm, elastic and fluctuating. Nasal examination is often negative. Sometimes the only eye symptom is oedema of the upper lid, chiefly of its inner half. The X-ray plates are a valuable aid in diagnosis and make clear the size and location of the frontal sinus and something of its condition. It is best to make at least two lateral and one antero-posterior plate. The pathological picture is somewhat as follows: During an acute inflammation of the mucous membrane lining the sinus there occurs a discharge of a considerable quantity of serous fluid. The cavity being insufficiently drained, the oedema of the membrane persists, blocking the ostium. The infected serum soon changes to pus. The membrane and bony wall begin to thin and sometimes the retained secretions escape into the orbit. The operation of Killian produces the least disfigurement, requires but nine or ten days after treatment, and is comparatively free from danger. The usual frontal incision is made through the eyebrow and extending down the side of the nasal bone. The frontal sinus is opened and

the bony plate cut away in the orbit and nasal cavity, leaving the bridge of bone along the brow, saving the pulley of the superior oblique muscle, if possible. The limits of bony removal are usually the trochlear attachment and supraorbital margin above, the anterior ethmoidal vessels behind and the lacrimal groove below. The ethmoid cells are curetted and the whole of the middle turbinal is removed, if necessary. Any part of the floor of the frontal sinus can be reached and curetted. The ethmoid region is packed with gauze, draining the frontal sinus. The wound is sutured. The sutures are removed on the fourth or fifth day. There is usually no recession of the globe, no diplopia, no interference with the function of the lacrimal sac, no infection of the globe, and vision is unimpaired. There is, however, a tendency to atrophic rhinitis, chronic laryngitis, etc., following such destruction of turbinate tissue and substitution of scar tissue.

THE CLINICAL PATHOLOGY OF AURAL DISCHARGES.

Dr. Wyatt Wingrave (Otological Section, Royal Society of Medicine, May 2, 1908) discusses this very important part of disease of the ear. For years Wingrave has been investigating the bacteriology of aural discharge, and he is probably the leading, if not the only authority on the subject. He submits that a careful and systematical examination of the aural discharge will reveal much of the nature of the morbid process which it accompanies; that it should be cytological, as well as bacteriological, and that it should constitute an essential part of our clinical routine. He discusses the subject under the following headings:

Gross Characters of Discharges—

Foetor Color, Density. Technical—
Collection, fixing and staining.

Composition—

Epithelium; Leucocytes and Lymphocytes; Epithelioid; Myelocytes, etc.

Bacteria—

Matrix—

In collecting material, whether for films or cultures, the following precautions should therefore be taken:

(1) It should be obtained from a point nearest to its probable source.

(2) All contaminations should be avoided, and every instrument sterilized.

(3) Its foetor, density, and color should be carefully observed.

Summary.

Acute suppuration of the middle ear in its mild (catarrhal) form is characterized by sharply defined leucocytes (polymorphs), very few lymphocytes and tympanic epithelium, singly or in clusters. A gramdiplococcus (Micrococcus catarrhalis) most frequently occurs, occasionally associated with mouth organisms such as spirochætæ and torulæ.

In the severe or suppurative type, leucocytes and erythrocytes predominate at first with a few lymphocytes. Later the erythrocytes disappear, while large mononuclear leucocytes become well marked on about the third or fourth day. Tympanic epithelium occurs early, but disappears until healing commences. The cytoplasm of the leucocyte becomes granular and ill-defined, while the nucleus stains faintly and is distorted and fragmented towards the second week. In infants, lymphocytes are much more numerous than in adults.

Many bacteria are found in acute discharges, including "Throat organisms," but the more prominent are Diplococcus catarrhalis, Diplococcus pneumoniae, Streptococcus brevis and longus

Acute external otitis may occur in several degrees from an acute desquamative process involving the superficial structures only, characterized by nucleated squames, gland epithelium and leucocytes, to abscess or purulent cellulitis, involving the deep structures, when leucocytes and lymphocytes will be abundant, accompanied by streptococci, diplococci, staphylococci and also rarely gonococci.

When the disease assumes a chronic form the discharge is "watery," lymphocytes anl leucocytes being few or wanting. Epithelial squames are plentiful, and among many varieties of bacteria the Penicillium glaucum is prominent.

The conditions responsible for chronic discharge from the middle ear—comprehensively termed chronic suppuration of the middle ear—are so varied that pathological accuracy demands some differentiation.

As most frequently happens, "granulating tissue" is responsible for the pus. Evidence of this is afforded by the presence of leucocytes of all kinds, large, small, mono, and polynuclear, normal and degenerated, but especially by lymphocytes, which are very numerous, while epithelial cells are not uncommon. Bone disease may be marked by myelocytes or osteoblasts.

Cholesteatoma is indicated by the presence of closely packed acidfast squames, with or without bacteria. This latter may appear to be an unnecessary distinction, but it is really one of great importance, especially when the cells are of antral source, for a

septic cholesteatoma in that situation affords a stronger reason for radical measures than a non-septic one; an interpretation which is amply supported by examination of antral contents removed by operation.

Among the many varieties of chronic discharge, my experience has taught me that there is one which deserves special attention. It is generally very profuse, intermittent, extremely foetid, opaque and of the consistence of cream. On examination it is found to be entirely free from cells, either epithelial or leucocytic, but consists entirely of throat organisms in an albuminous matrix. Strictly speaking it is therefore not true pus, but merely a polymicrobic emulsion. It appears as if the imperfectly drained and ventilated antro-tympanic cavity had assumed the role of cultivating chamber or "septic tank" containing bouillion in which different families of bacteria abundantly flourished.

By the term "throat organisms" is meant a group of bacteria which are nearly always to be found in the mouth and faucial area, either in health or disease, but do not occur in the healthy ear. It includes spirochaeta foetida, bacillus fusiformis, leptothrix, bacillus subtilis, bacillus proteus vulgaris, penicillium glaucus, together with a large variety of moulds and yeasts which may be potentially pathogenic, but for the time are leading a saprophytic existence in the throat.

In this group of cases, which is by no means a small one, a highly "septic" state of the mouth, fauces or nasal cavities invariably coexists, the commonest form being pyorrhœa alveolaris and chronic lacunar tonsillitis, affections which are probably not only responsible for the original infection, but also for repeated renewals of the aural trouble.

With such a discharge, whose most striking feature is the large number of spiral and fusiform bodies with practically no leucocytes or lymphocytes, the existence of an active granulation surface may unhesitatingly be excluded. There is a passive yet highly septic cavity, which calls not only for active aural measures, but also for attention to the original source of infection.

It is the differentiation and identification of such a condition as this that may fully repay the extra trouble of a microscopical examination of the discharge. Such cases further illustrate the necessity for a bacteriological examination of the naso-pharynx, which I have found in healthy subjects to be sterile, but invariably septic in all acute and chronic infections of the antro-tympanic cavity.

It is important to note that in acute exacerbations of the chronic suppurative form, the discharge somewhat resembles the primary acute. Freshly excluded leucocytes prevail with a diplococcus, Pfeiffer's bacillus or streptococci, and diplococci. Lympho-

cytes are often numerous, and myelocytes may be seen should there be any bone complication. In the ocurse of a few days mononucleated leucocytes become plentiful, with a few more lymphocytes and nucleated squames.

In tuberculous examples of this group there will also be present the specific bacilli. But tuberculous discharge, when chronic, is of a very distinct type. It is thinner or watery in character, with white granules or flakes. Lymphocytes are plentiful, with large epithelioid and even "giant-cells." Leucocytes are far less numerous than in non-tuberculous, except during an acute period due to supplementary infection when the discharge is much denser and distinctly purulent in type. The presence of minute amorphous granules and "bone grit" is also a marked feature of tuberculous discharge. Giant-cells are rare, unless the specimen be taken directly from its source. As in tuberculous sputum, Micrococcus tetragonus is a frequent attendant. When the process is mixed, as usually happens, many varieties of bacteria will be present and attended by marked foetor.

CASE OF CHRONIC SUPPURATIVE PANSINUSITIS, IN WHICH KILLIAN'S COMPLETE OPERATION WAS PERFORMED ON THE RIGHT SIDE AND ON THE ANTERIOR AND INFERIOR WALLS ONLY ON THE LEFT SIDE.

HERBERT TILLEY, F.R.C.S., at the Laryngological Section of R.S.M., presented the following case:

Dr. T., aged 35, had suffered from a profuse purulent nasal discharge for two years; he used from six to seven handkerchiefs a day. The discharge was very foul, but this was only noticed by the patient's friends. He did not suffer from headache, but a slight feeling of tension over the lower forehead. The maxillary antra were operated on in May, 1907, by a provincial surgeon.

February 12, 1908.—Mr. Tilley performed a complete Killian operation on the right sinus.

March 4, 1908.—The anterior wall and floor of the sinus were removed. The wounds were sutured in their entirety, with the exception of the outer angles, where a small drainage-tube was inserted and ran inwards for the length of the sinus. The upper regions of the nasal cavities are now quite free from pus. A skiagram of the sinuses was shown, which illustrates very clearly their size, the presence of septa and loculated chambers.

Mr. Herbert Tilley said he showed the case to illustrate the

fact that the complete Killian operation was a better method than the incomplete one. He did two operations on the same patient and his reason for the incomplete one on the left side was that there was very little ethmoidal disease there. He sutured the wounds entirely at the close of the operation, except a small point at the outer angle of the eyebrow, where a fine drainage-tube was passed through the sinus, as far as the fronto-nasal canal. He was not responsible for the slight antral suppuration at the present time; he believed it was due to the fact that the whole mucous membrane from the antrum had been removed and its place taken by granulation tissue, which not only suppurated now, but would do so for ever unless it became covered with normal epithelium. (Proceedings of the Royal Society of Medicine, Vol. I., May, 1908.)

SYMPTOMS OF SEPTIC THROMBOSIS, OF THE LATERAL SINUS.

(1) A history of purulent aural discharge for a year or more. (A case is on record of only two days' discharge.)

(2) Sudden onset of the illness, with headache, vomiting, rigor, and pain in the affected ear.

(3) An oscillating temperature.

(4) Vomiting, repeated day after day.

(5) A second, third, or more rigors.

(6) Local tenderness and oedema over the mastoid, or in the course of the jugular vein.

(7) Stiffness of the muscles of the back or side of the neck.

(8) Optic neuritis.—Dr. Balance.

A METHOD OF PREVENTING HEMORRHAGE DURING ADENECTOMY.

Inglauer (*Laryngoscope,* May, 1908) has devised a method for lessening the amount of blood during an adenoid operation. He draws attention to the importance of taking into account the danger that may follow excessive hemorrhage—shock, extra risk of infection because of the anaemia, blood getting into larynx, etc.

His method, described in his own words is as follows: It consists essentially in introducing the draw-strings of a post-nasal tampon before beginning the operation, and of drawing the tampon into place immediately following the adenectomy.

The instruments necessary for the procedure are: (1) A modified Bellocques canula, made of a slender hard rubber eustachian catheter; (2) A rubber sponge of proper size, to serve as a post-nasal tampon. A stout piece of tape is passed through the sponge tied about it, and left with the ends a foot long.

The patient is anaesthetised until the pharyngeal reflex is partially abolished. By means of the canula, introduced through the nose, one end of the tape is drawn through the naso-pharynx and out the mouth. Immediately the mass is removed from the naso-pharynx the sponge is pulled into the pharyngeal vault and held firmly, so as to prevent any excessive loss of blood.

A CASE OF HEMORRHAGE FOLLOWING REMOVAL OF THE FAUCIAL TONSIL.

(1) DUFOUR (*The Laryngoscope,* May, 1908, Vol. XVIII., No. 5), in hundreds of operations with the cold wire snare, met with but one case of severe hemorrhage. The case is as follows: Mr. L. White, aged 35 years, came into my office and requested me to remove his tonsils, saying they bothered him very much and caused a continual bad taste in his mouth, and that he had frequent attacks of tonsilitis. I found them very large, and standing out very prominently from between the pillars. The crypts were filled with cheesy matter, the odor of which was very offensive. They were hard and fibrous in character. I told him that I would only remove one at a sitting, to which he consented. After swabbing it with a 6 per cent. solution of alypin, I loosened the pillars with a tenaculum, drew the tonsil into the snare and completely enuclated it. There was not much bleeding. After keeping him in the office for a while, I sent him home, with orders to remain quiet until the next day. That afternoon a physician telephoned me that there was in his office a man whose tonsil I had removed that morning, that it was bleeding so persistently that he could not arrest it, having run the gamut of styptics. I requested that he be sent to my office, which was done. I tried to arrest the bleeding with the galvano-cautery, pressure, etc., but could not. The vessel was at the bottom of tonsillar space, near the base of the tongue. I soon found that it was no ordinary hemorrhage and must be stopped at once, as he had lost two or three pints of blood. I sent him to the hospital, and while waiting for me he lost at least another pint. I arrived at the hospital about fifteen or twenty minutes after he did. I took him to the operating-room, placed him on his back on the table, and by aid of an electric head mirror to illuminate the throat, I passed a suture through the lower part of the pos-

terior pillar, drawing it forward and over the bleeding vessel; the suture was then passed through the anterior pillar. A continuous suture was thus used, suturing posterior and anterior pillars together. This stopped the hemorrhage at once. He was kept in the hospital all night. He refused to remain longer, so went home the next morning. I judged that he lost between three and four pints of blood. He was pretty well exsanguinated, but soon recuperated. The stitches were removed in a week.

A CASE OF THYRO-LINGUAL FISTULA TREATED BY ELECTROLYSIS AND EXCISION.

DR. DUNDAS GRANT said the present was the third time the patient had been operated upon. The first operation was done by a well-known and skilful surgeon, but recurrence took place. In the second operation, done by himself, the result seemed at the time to be good, but in two years distinct recurrence had ensued. On the third occasion he determined to have the thing electrolyzed, and inserted a platinum needle, which he pushed up to the hyoid bone, while Dr. Lewis Jones carried out the electrolytic process. Dr. Grant then proceeded to dissect out the sinus. That time the operation was successful. The last operation on the present case was done in 1906, and there were no signs of recurrence. In the case which he showed with Dr. Mackenzie it would have been impossible to introduce the needle as it existed, but after the tube had been exposed and straightened it might have been done. If he had another such case, however, in which he could pass a platinum needle through the sinus, he would try the effect of electrolyzation without dissection. In the present case he did not know which contributed most to the case. (Proceedings of the Royal Society of Medicine, Vol. I., No. 7, May, 1908.)

TWO RADIOGRAPHS TO ILLUSTRATE THE VALUE OF THE X-RAYS IN SOUNDING AND WASHING OUT THE FRONTAL SINUS.

WHEN unprovided with the X-rays it is usual for us to depend upon the direction taken by the canula to decide whether the frontal sinus has been entered or not. In the first photograph it will be seen that the point of the canula passes up towards the frontal sinus and that the portion of it outside the anterior

nares lies flat against the upper lip. These two points might make us think that the frontal sinus had been entered, particularly when pus could be washed out, as it was in the case to which this photograph refers. But on the screen, as shown in the photograph, it will be seen that the canula had not entered the fronto-nasal duct, but had passed up into an anterior ethmoidal cell, and that its point was pressed against the floor of the anterior fossa of the skull. It will readily be recognized that any roughness in manipulation in this area might have serious results.

The second photograph shows the same case, with the same canula, where the instrument was, with the help of the X-rays, securely guided up into the centre of the frontal sinus. (Sinclair Thompson, in the Proceedings of the Royal Society of Medicine, Vol. I., No. 7, May, 1908.)

P. G. G.

The Canadian Journal of Medicine and Surgery

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Editorials.

DEAN REEVE RESIGNS.

DR. R. A. REEVE, for twelve years Dean of the Medical Faculty of the University of Toronto, has resigned. The duties of the Dean are to preside as Chairman of the Faculty and to have a general supervision of the interests of that body. He is, *ex-officio*, a mem-

ber of the caput and Senate, and is the official head for entertaining the faculty's distinguished visitors.

The Medical Faculty of the University of Toronto was started in 1843. It was abolished in 1853, but was reorganized in 1887. Dr. W. T. Aikins was Dean from 1887 to 1893; Dr. U. Ogden from 1893 to 1896, since when Dr. R. A. Reeve has held the office.

During the last twelve years important changes have taken place in the Medical Faculty, and much time had to be devoted to the work of reorganization. A great deal of committee work was also necessitated by matters arising out of the erection of the new medical building in Queen's Park. During his term of office, Dean Reeve has endeared himself to his associates and won the respect and admiration of all who have had business relations with him, by his unaffected cordiality of manner and his strictly honorable dealing.

The Board of Governors of the University have appointed Dr. Charles K. Clarke, Superintendent of the Toronto Asylum, to the vacancy. J. J. C.

THE ELIMINATION OF TUBERCULOSIS.

From data given out at the International Congress of Tuberculosis, held at Washington last September, it appears, that decreased mortality rates from tuberculosis have been noted in many parts of the world. In Prussia, the death rate from tuberculosis, during the last decade, has been reduced 40 per cent.; in New York City, during the past fifteen years, more than half; in Boston, 55 per cent. Dr. L. H. Flick, Medical Director of the Henry Phipps Institute, of Philadelphia who acted as chairman of the committee having in charge the recent Congress at Washington, announced, that "the white plague" may now be given but fifteen years to disappear from the surface of the earth, as utterly as smallpox. He said: "The total number of deaths from consumption last year in Philadelphia was 3,600; a reduction of 300 has been made in the mortality rate of the past six months, as compared with the year before, and, if the same rate of progress is kept up for six years to come, consumption will be abolished."

In England, Dr. F. Bulstrode, asserts that, in the year 1838, tuberculosis destroyed 60,000 lives in England and Wales; in 1906, with a vastly increased population, this disease destroyed less than 40,000 lives. The tuberculosis mortality in England and Wales, in 1906, was about equal to the decrease, which obtained in the preceding thirty years; therefore, Bulstrode expressed the belief, that, should the decrease in the tubercular death rate continue in the same ratio, consumption would disappear from England and Wales within the coming thirty or forty years.

These statistics and the conclusions drawn from them go to show that great success has attended the efforts put forth by health authorities to prevent the extension of tuberculosis from the sick to the well, and also that the treatment of tubercular patients in sanatoria and in private practice has greatly obviated the tendency to death and saved many lives. In fact, if it were possible in all cases to begin the treatment of tuberculosis at an early stage, when recovery is easy, the anticipations expressed by Flick and Bulstrode would seem less improbable. It is an easy matter to begin the treatment of the smallpox patient during the first days of his ailment and to vaccinate suspects, thus preventing the further spread of that disease; it is quite otherwise with the consumptive patient. Dr. Flick acknowledges, (see Report for 1908, Henry Phipps Institute, p. 60) that two-thirds of the patients who applied for treatment there came at a stage of the disease when recovery is difficult, and when, if it does take place, it means invalidism, in a relative sense, for the rest of life. When, in addition to the chronicity of the disease, "it may be assumed, that, in Philadelphia, in which there are over three thousand deaths from consumption, five to eight thousand houses are contaminated every year by consumptives in a contagious stage of the disease," the elimination of tuberculosis in a few years from that city cannot reasonably be expected to occur. Another fact, which, even were the practice of the notification of tuberculosis and the disinfection of its contagious centres made obligatory, will delay the advent of the elimination of tuberculosis, is the prevalence of that disease among the males who do the hard work. The Census Report of the United States, for 1900, shows that relatively forty-seven more males for every one hundred thousand male population died from tuberculosis, during the year,

than for every hundred thousand females living. The males live more in the open air than the females; but, in spite of it, succumb more frequently to tuberculosis; and this fact seems to show, that hard, exhausting labor is a more potent factor in developing tuberculosis than is the want of fresh air.

Dr. Flick's report also shows, that all occupations, which give fair compensation and do not call for severe physical labor, have a relatively low attendance rate at the Phipps Institute. Thus, the clerk and bookkeeper, who are usually looked upon as the legitimate prey of consumption, stand quite low in the rate of attendance, and the business man, who follows an indoor life, stands next to the policeman, who has an easy life out of doors, with fair compensation. On the other hand, the huckster, the peddler, and the sailor, who work hard in the open air, but who have bad sleeping accommodations, with poor compensation, show a high attendance at the Phipps Institute.

A study of Dr. Flick's most valuable report does not leave the impression, that the elimination of tuberculosis is near. Hard, debilitating work must ever be the lot of many males and of some females, and the implantation and subsequent development of tuberculosis in these workers has been noted. Observation shows, that fair compensation, by enabling the toiler to secure good food and good housing, obviates the weakening effects of hard labor. Even if compensation for hard work should be fixed on a strictly equitable basis, tuberculosis is not likely to become a negligible quantity in the near future; but the sickness rate from tuberculosis would be considerably reduced, if the hard workers got higher compensation.

J. J. C.

THE PRANKS OF COLLEGIANS ON HALLOWE'EN.

THERE is nothing new in the pranks and horse-play of collegians on Hallowe'en; students at the beginning of the twentieth century, with no notion of plagiarism, reproduce the fantastic sports and antics dear to students in every age and clime. Just for the same reason, too, for youth is the season of jollity, and, if, forty years ago, two or three hundred medical and arts students made a noise on University Avenue, or serenaded, in a rather boisterous fashion,

a young ladies' academy, *a fortiori*, 3,750 undergraduates of the University of Toronto could and did make the welkin ring on the evening of Hallowe'en, 1908.

The collegians, who are following the different courses at the University of Toronto, are looked upon by their countrymen as the flower of the nation, the pride of many a good family throughout Canada. In due time, these lads will blossom out into physicians, lawyers, judges, clergymen, engineers, and statesmen. Many of them will illustrate the noblest virtues and highest intellectual attainments of their race in private and public life, and it is to be hoped, that some of them will win the right to place wreaths for science, art and literature very high up in the modern Parthenon.

Now, what will you? They are boys, and University boys are not endowed with a plentiful lack of wit, with most weak hams. By no means. The University lads are not suffering from neurasthenia; but are chockfull of the wine of life, and ready to laugh, chaff, and kick up their heels, except when they are engaged in cramming themselves with classic or scientific lore. Were they to celebrate Hallowe'en in a sedate manner, 'twould be the strangest thing of all. Listening to their college yells, one is reminded of the lines in "Old Mortality":

> "Sound, sound the clarion! Fill the fife!
> To all the sensual world proclaim
> One crowded hour of glorious life
> Is worth an age without a name—"

Perhaps so; but then at a jollification nothing should be done which would entail subsequent regret. It's glorious to wake up next morning and find yourself famous; but it's unpleasant to do penance in the pillory of public opinion for some hasty indiscretions—just because you have not been judicious in your jokes, and have crowded several kinds of crude fun into your hour of glorious life.

J. J. C.

EDITORIAL NOTES.

Mental Defect and Inebriety.—In the Report of the Royal Commission on the Feeble-Minded, (*British Medical Journal*, Aug. 15, '08), reference is made to mental defect and inebriety. The Commissioners find, that some 60 to 70 per cent. of the habitual inebriates dealt with under the Acts are *mentally defective*, the evidence laid before them supporting the conclusion that inebriates form a *sub-class of the mentally defective*. In harmony with this view, they arrived at the following conclusions:

1. That the powers and duties of County Committees and of the Board of Control should extend to mentally defective inebriates, as well as to other classes of the mentally defective.

2. That the licensing and inspection of institutions, which are established for the reception of mentally defective inebriates, or in which mentally defective inebriates are received, devolve on the Board of Control.

3. That County and County Borough Councils be placed under a legal obligation to provide accommodation for mentally defective inebriates, or to contribute towards the provision of such accommodation, and to contribute to the maintenance of mentally defective inebriates, including any such inebriates as a criminal court may think proper to commit to an institution, established for the care and control of this class.

4. That the Inebriate Acts be amended so as to facilitate the committal to suitable institutions of persons who are shown, to the satisfaction of a criminal court, to be mentally defective inebriates.

5. That the processes of reception orders and all other methods applicable to other forms of mental defect be extended to mentally defective inebriates.

6. That the existing system of Treasury contributions, payable to State and certified inebriate reformatories, be continued.

The conclusions are given in full, so that the reader may see the exact view which the Commissioners have taken of the association of inebriety and feeble-mindedness in the same individual. This point should be made quite clear. It is not a question of the pathology of inebriety or a question of the moral conduct of the in-

ebriate, but simply the fact that habitual inebriates in Great Britain, in the proportion of from 60 to 70 per cent., actually form a sub-class of the mentally defective. Would it not be opportune, if the Provincial Government were to appoint a commission to investigate the concurrent ratios of habitual inebriety and feeble-mindedness in Ontario? In this Province, the notion that a habitual inebriate should be deprived of his liberty might not meet with popular favor. If our statistics warrant such a course, an Inebriate Act might be passed, so framed as to facilitate the committal to suitable institutions of persons who are shown, to the satisfaction of a criminal court, to be mentally defective inebriates.

Canadian Wines.—From the frequency with which the terms Fine Old Port Wine, Native Port, Canadian Port, appear in the Canadian-native wine trade, one might infer that Canadian wine is understood to be similar to port wine. This question has been studied by Mr. McGill, Analyst of the Inland Revenue Department, Ottawa (See Bulletin No. 160, Native Wines), who reports that Canadian ports differ in important particulars from ports of Spanish or Portuguese origin. Karng quotes as the mean of many analyses of port wine the following:

Specific gravity	1.0088	
Alcohol	16.18	(=34.8 proof spirits)
Extract	8.25	
Sugar	6.04	
Non-sugars	2.21	
Total acidity	0.42	(as tartaric acid)
Volatile "	0.085	(as acetic acid)
Fixed "	0.335	(as tartaric acid)

Thirty-one samples of Canadian port wine gave the following results on analysis:

Specific gravity	1.0002 to 1.0762
Alcohol (proof spirit)	16.42% " 38.18%
Extract	2.65% " 24.29%
Sugar (dextrose)	1.59% " 19.00%
Non-sugar solids	0.41% " 3.83%
Total acidity	0.525% " 1.035%
Volatile "	0.066% " 0.473%
Fixed "	0.345% " 0.645%

Mr. McGill thinks, that the diversity of composition illustrated by Canadian port wines implies "a lack of care in manufacture or a regrettable ignorance of what constitutes this type of wine."

Might it not also imply that Canadian wine is, to a certain extent, an artificial product, made from fermented grape juice, to which varying proportions of sugar are added? The popular taste in Canada may demand a sweet wine, and the high sugar content of most of the samples analyzed at Ottawa would seem to indicate, that they might have been more appropriately designated Canadian Tokay, or Canadian Malaga, rather than Canadian Port. The analyst remarks, that this fact would not prove that dry wines cannot be produced in Canada, because six or seven samples occur in which the residual sugar is less than 0.5 per cent. The great majority of the samples show, that from 8 to 15 per cent. of dextrose sugar is added to the native grape juice, in making wine. The analyst commends the practice of some Canadian wine-makers, who have adopted special names for the brands which they place on the market. From the fact that preservatives, such as salicylic acid and sulphites, are found in the samples analyzed, one would infer, that fermentations other than the alcoholic are prone to occur in the making of Canadian wine, and that chemicals must be used to prevent acidity. This is certainly undesirable, for, as the analyst says, "The production of these esters and other by-products of the natural fermentation of sugar, whose presence gives character and value to the best wines, is hindered, and the resultant beverage, while not necessarily unwholesome, as a wine, is of low quality."

Dilute Sulphuric Acid in the Treatment of Carbuncles and Boils.—In the *British Medical Journal* (August 15, 1908), Dr. J. Reynolds and Dr. Russell J. Reynolds draw attention to the use of dilute sulphuric acid, given per os, to patients suffering from carbuncles or boils. To be effective, doses of 20 to 30 minims, well diluted with water, should be taken every four hours. They say: "In a case of carbuncle treated in this way, it will be noticed that, after the first twelve or eighteen hours, the affected area becomes distinctly circumscribed, and the lesion ceases to extend; softening of the tissues in the affected area takes place, and pus is discharged, healthy granulations commence to form at the base, and the process of repair goes on uninterruptedly. It is quite unnecessary to *cut* or to interfere with the part in any way, except, perhaps, to apply some antiseptic dressing, such as carbolized vaseline (1 in 40) on lint. The treat-

ment should be continued, for at least a fortnight after the lesion has disappeared. The cases in which this treatment has proved efficacious have been uncomplicated with diabetes millitus."

The authors claim that the results of this simple treatment have been uniformly successful. It does not disturb the patient's digestion nor cause any inconvenience in any way.

Overweight and Underweight.—Dr. Brandroth Symonds has correlated a number of data from the records of 200,000 males weighed in their boots and as ordinarily clad, in a paper on "The Influence of Overweight and Underweight on Vitality" (*New York Medical Record*, Sept. 5, 1908). Overweight is 20 per cent. above the standard for the height and age. The standard of a man of forty years, five feet six inches tall, being one hundred and fifty pounds, he would be overweight should he exceed one hundred and eighty pounds. Underweight is below 80 per cent. of the standard.

Dr. Symonds gives a table, showing the causes from which persons with overweight and underweight die. Overweight is not bad in a young person, who has a tuberculous family history, for the excess of weight should tend to overcome a tuberculous predisposition. Underweight and a tuberculous family history give a mortality of 180 per cent. in the ages below thirty-five; above that age, the influence of tuberculosis depends on the number of cases in the family. Underweight plus dyspepsia is a serious combination below the twenty-fifth year, giving a mortality as high as 150 per cent. Symonds says, that this combination often indicates incipient tuberculosis, which cannot be determined by physical examination. No deductions are given regarding cancer, as far as overweight or underweight is concerned, among men or women. Overweight is common among diabetics. Hepatic cirrhosis is three and a half times as prevalent among persons with overweight, as in the general experience. The other digestive diseases, as well as cirrhosis, are below the normal in persons with underweight, thus showing their moderation in food as well as in drink. Bright's disease, both acute and chronic, is nearly as prevalent among persons with overweight, as in the general experience. Carbuncle is in excess among persons with overweight, perhaps by reason of unrecognized diabetes. Mortality is markedly increased with increase in abdominal girth,

and progressively, as the latter exceeds the expanded chest. Pneumonia is nearly twice as fatal among persons with underweight as among those with overweight; it would almost appear that persons with overweight have a certain immunity to this disease, while others with underweight are more than usually susceptible to it.

Organic heart disease shows an excess among persons with overweight and a deficiency among those with underweight. Cerebral congestion and hemorrhage, cerebral apoplexy and paralysis, and the nervous forms of insanity show a slight excess among persons with overweight, while persons with underweight are below the average. For the best interests of health, one should be near standard weight, within ten per cent. at least.

Deportation of Undesirable Immigrants from Canada.—To restrict the crowding of asylums in Canada with foreign-born persons of the defective type, deportation is being applied with considerable vigor by the Canadian Government. In a special despatch to the Toronto *Globe* the following appears: "Ottawa, Oct. 29, 1908.—During the first nine months of this year, the Immigration Department has deported 1,011 immigrants, as being undesirable citizens. During the same period, 1,266 people have been refused entry from the United States."

In a pamphlet containing a reprint of introductory remarks of S. A. Armstrong, Inspector of Prisons and Public Charities, and Dr. C. K. Clarke, Medical Superintendent of Toronto Hospital for Insane, contained in the report on hospitals for the insane of Ontario for 1907, we notice that preventive measures are recommended, which, if carried out, would lessen the necessity for deportation. Mr. Armstrong advises, that a card catalogue be installed by the Immigration Department, containing the names of all arriving immigrants, date of landing, name of ship on which they came, and other information necessary for identification; also that each immigrant be provided with a medical certificate from a physician familiar with the immigrant's previous history and a certificate from the ship's physician, both certifying that he is physically and mentally fit. A certificate is also required from the head of the municipality in which the immigrant was domiciled, that such immigrant has not been insane nor an inmate of an

asylum or other place of detention, and that neither his father, mother, brothers or sisters have been insane. Lastly, it is recommend[illegible], that a more detailed medical examination of the immigrant should be made, either on arrival, or when on board the steamer in transit, by men who are skilled in mental diseases. These recommendations are thorough and are well worthy of consideration.

J. J. C.

PERSONALS.

DR. W. J. WILSON, College Street, has recently spent three weeks at Johns Hopkins Hospital taking a special course of study of diseases of the digestive organs.

DR. C. K. CLARKE, of Toronto Hospital for the Insane, has been appointed by the President of the University of Toronto Dean of the Medical Faculty of that institution. We offer Dr. Clarke hearty congratulations and feel that President Falconer has made a good choice.

DR. FREDERIC BRUSH, of Boston, has been appointed Superintendent of the New York Post-Graduate Medical School and Hospital. Before assuming the position he will devote some time to a study of post-graduate instruction and hospital administration in the various American medical centres.

DR. C. F. MOORE, of Bellevue Avenue, left Toronto ten days ago to spend three weeks making a special study of Abdominal Surgery at Dr. Mayo's Hospital, Rochester, Minn. After that, Dr. Moore goes to Chicago for a short post-graduate course in General Surgery at The Chicago Policlinic. The Doctor intends disposing of his house on Bellevue Avenue and hopes to build in the northern part of the city next spring.

News of the Month.

ONTARIO MEDICAL ASSOCIATION

THE next annual meeting of the Ontario Medical Association will be held in Toronto on June 1st, 2nd, and 3rd, 1909. The following Officers were elected last year to look after the interests of the Association at the coming meeting:—

President.—Dr. H. J. Hamilton, Toronto.

Vice-Presidents.—Dr. R. R. Wallace, Hamilton; Dr. A. Dalton Smith, Mitchell; Dr. A. M. McFaul, Collingwood; Dr. George Field, Cobourg.

General Secretary.—Dr. E. Stanley Ryerson, 243 College St., Toronto.

Assistant Secretaries.—Dr. Samuel Johnston, 169 Carlton St., Toronto; Dr. J. E. Davey, 145 King Street, Hamilton.

Treasurer.—Dr. J. Heurner Mullin, 201 James Street South, Hamilton.

Chairman Committee on Papers and Business.—Dr. Herbert A. Bruce, 64 Bloor Street East, Toronto.

Chairman Committee on Arrangements.—Dr. Bruce L. Riordan, 73 Simcoe Street, Toronto.

The Committee again decided to adopt the system of dividing up into Sections, of which the following is a list, with their Officers: Surgery—President, Dr. G. A. Bingham; Secretary, Dr. A. B. Wright. Medicine—President, Dr. W. H. B. Aikens, Secretary, Dr. F. A. Clarkson. Obstetrics and Diseases of Children—President, Dr. Adam Wright; Secretary, Dr. J. A. Kinnear. Eye, Ear, Throat and Nose—President, Dr. D. J. G. Wishart; Secretary, Dr. C. Campbell. Preventive Medicine—President, Dr. C. Sheard; Secretary, Dr. C. J. Hodgetts.

General sessions will be held in the afternoons and on one evening, the Sections of Surgery and Medicine meeting every morning, and one of the Special Sections on each morning.

The Committee on Papers and Business have been successful in getting promises of papers from the following men:—

Dr. John B. Deaver, Philadelphia; Dr. E. F. Cushing, Cleveland, on "Copious Water Drinking in Typhoid Fever;" Dr. W. P. Manton, Detroit; Dr. Little, Montreal; Dr. J. H. Vrooman, Winnipeg; Dr. A. Baines, Toronto; Dr. McFaul, Collingwood; Dr. Slemons, New York; Dr. McDonald, New York; Dr. J. M. Elder,

Montreal; Dr. J. M. Rogers, Ingersoll; D. Hadley Williams, London; Dr. H. B. Anderson, Dr. W. McKeown, and Dr. C. B. Shuttleworth, Toronto; Dr. E. Ryan, Kingston.

In order to get in closer touch with the various city and country medical societies throughout the Province, a motion was passed making the Presidents of these Societies Corresponding Members of the Committee. As some difficulty has been encountered in securing their names, the Secretary will be much obliged if the gentlemen occupying this position will send him their names and addresses. They will be kept informed from time to time of the work done by the Committee.

A NATIONAL DEPARTMENT OF HEALTH

At the last meeting of the New York Academy of Medicine Dr. C. A. L. Reed, of Cincinnati, stated that President Roosevelt would include in his forthcoming message to Congress a recommendation that all existing national health agencies be organized into a single "Department of Health." The head of such a Department would be a member of the Cabinet. For many years medical men throughout the United States, individually and through the medium of the American Medical Association, have vigorously urged the creation of such a Department in our National Government, both on economic and humanitarian grounds. Now that this recommendation of the medical profession of the country has received the approval of the President and is to be brought to the official attention of Congress, medical men especially should rally to its support and bring every proper influence to bear upon members of Congress to make the proposed measure a law.—*Colorado Medicine.*

For a long time now the Canadian banks have been importing Scotch bank clerks. It was only the other day that the Church of England decided to import Scotch missionaries. From which it appears that the Scotch are particularly apt at guarding the welfare of Canadians here and hereafter. Scotch thrift is to help us gain the world here; Scotch shrift is to help us to the world hereafter. Canada is, indeed, a lucky country to be so watched and tended by the Scotch. Their courage and industry pulled Canada through her hard times, and their enterprise will preserve Canada now that she is rich and easy. Neither our souls nor our siller are to be lost if Scotch missionaries and Scotch bank clerks can prevent it. Truly, the Scotch are a saving people.

The Physician's Library.

BOOK REVIEWS.

Fourth Annual Report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, February 1, 1906, to February 1, 1907.

This report is valuable for the fourteen well-written articles it contains. These articles, clinical and pathological in character, deal with the various forms of tubercular disease, as observed at the Phipps Institute. Useful to the practitioner, the statistics and observations made by the contributors would also tend to help along the work of preventing tuberculosis, if published in the daily papers and monthly magazines.

International Clinics. Eighteenth Series. Vol. II. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pædiatrics, Obstetrics, Gynæcology, Orthopædics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest to students and practitioners.

While the editor announces that this work is intended for students and practitioners, it is par excellence a work for the student practitioner. The articles are by the foremost thinkers and are all practical and helpful.

In the section on Treatment, Louis Fisher's article on "Treatment of Scarlet Fever," including prophylaxis, goes into the treatment of many complications of this far-reaching disease.

The specific disease is again dealt with in an article by Hollopeau, who advocates its treatment by atoxyl, .50 to .75 gramme per gluteal injection, for six to eight doses. He claims preventive as well as curative properties for the drug, and that it may be combined with mercury and iodine.

"Treatment by Inoculation of Bacterial Vaccines" is the subject of an article by Turton, of Hull. He enters fully into the treatment, and cites a very encouraging number of cases benefited by the opsonic method.

In Medicine, an article by Cecil, on "Valvular Heart Disease," is especially interesting.

Theodore Diller, of Pittsburg, presents an article on "Pain as the Chief or Sole Expression of a Psychic State." He shows that hysterical pain may be recognized by two kinds of evidence, negative and positive; first, the pain fails to conform to that of any one organic disease—no physical disease to account for the pain. In addition, the influence of suggestion upon the pain, the manner in which the patient relates the story and conducts himself, and the manner in which the pain is described, are all indicative. The patient's story goes into great detail, with many dramatic accessories, showing that his whole life features chiefly about his pain.

In Surgery, there appear articles on "Reconstructive Surgery of the Face," by Roberts, of Philadelphia, and "The Symptoms and Diagnosis of Cancer of the Large Intestine," by Mummery, and "Treatment of Varicose Ulcer and Varicose Veins of the Leg," by Willmoth, are all full, comprehensive and practical, the latter article being especially valuable to the general practitioner.

Sampson, of Albany, contributes an article on "The Clinical Manifestations of Uterine Cancer," every word of which is worth pondering, when we consider how frightfully common this dread scourge is. With these statements of his all will agree:

"1st. In early stages it is a local process and curable.

"2nd. The growth is rapid, and soon extends beyond eradication by operative measures.

"3rd. Symptoms appear before the case is inoperable."

This one article, so splendidly illustrated, is worth the price of subscription. Every page is of interest and suitable to the student practitioner's requirements.

J. N. E. B.

Clinical Bacteriology and Haematology for Practitioners. By W. D'Este Emery, M.D., B.Sc. (Lond.), Clinical Pathologist to King's College Hospital, and Pathologist to the Children's Hospital, Paddington Green; formerly Assistant Bacteriologist to the Royal Colleges of Physicians and Surgeons, and sometime Lecturer on Pathology and Bacteriology in the University of Birmingham. Third edition. London: H. K. Lewis, 136 Gower Street, W.C. 1908.

The success of the first and second editions has encouraged the author to bring out another so soon, adding to it somewhat, yet not altering the general scope. We find as some of the more important additions: a brief account of the methods of preparing bacterial vaccines; an account of making cultures of the blood by the use of an all-glass exploring syringe; and details of lumbar puncture, all being important and up-to-date matter. Some fine colored plates have been added.

The book should prove a good guide to the practitioner.

W. H. P.

Practice of Medicine for Nurses. By GEORGE HOWARD HOXIE, M.D., Professor of Internal Medicine, University of Kansas. With a chapter on the Technic of Nursing, by PEARL L. LAPTAD, Principal of the Training School for Nurses, University of Kansas. 12mo of 248 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Canadian Agents: J. A. Carveth & Co., Ltd., Toronto. Cloth, $1.50 net.

After glancing over this book, perhaps the simplest way of reviewing it would be to say that a nurse cannot read it carefully and not receive benefit from so doing. It will be found helpful to those engaged in nursing the sick. W. A. Y.

The Newer Remedies, including their synonyms, sources, tests, solubilities, incompatibles, medicinal properties, and doses, as far as known, together with such proprietaries as have similar titles. A reference manual for physicians, pharmacists, and students. By VIRGIL COBLENTZ, A.M., Phar. M., Ph.D., F.C.S., Professor of Chemistry in Columbia University, Department of Pharmacy. Fourth edition, revised and enlarged. Boston: The Apothecary Publishing Co., 145 High Street. 1908.

This is an exceedingly useful book of reference, the number of synthetic remedies having so increased during the last few years that it is most difficult to bear but a small proportion in mind, and still more so their composition and medicinal properties. Dr. Coblentz' work fills a gap and should prove most useful.

The First English Conquest of Canada, with some account of the earliest settlements in Nova Scotia and Newfoundland. By HENRY KIRKE, M.A., B.C.L.; F.R.G.S.; author of "Twenty-five Years in British Guiana," "From the Gun Room to the Throne." Second Edition, enlarged and illustrated. Sampson Low, Marston & Co., Ltd., 100 Southwark Street, London, S.E. 1908. Price, 3s. 6d. net.

This book is of special interest to Canadians on account of the Quebec tercentenary celebrations of past weeks, and the visit of H.R.H. the Prince of Wales to our shores. A perusal of it will be interesting and undoubtedly educational, and we would recommend its purchase. W. A. Y.

The Stooping Lady. By MAURICE HEWLETT, Author of "The Forest Lovers," "Richard Yea and Nay," etc. New York: Dodd, Mead & Comany. 1907.

The state of Whig society of a century ago in England is well represented. The arrogance of the aristocrats toward the lower

classes is shown in contrast with the society of the present day. The theme of the romance is the *stooping* of a lady of this set to the *debased* level of a tradesman. The conclusion is a tragedy in the death of the latter, who has been a successful radical politician and is killed in a riot, but all is made happy by the lady finding a man who claims her affection, though not as that first given. J. J. O.

The Sexual Disabilities of Man and Their Treatment. By ARTHUR COOPER, Consulting Surgeon to the Westminster General Dispensary; formerly House Surgeon to the Male Lock Hospital, London. London: H. K. Lewis, 136 Gowers Street, W.C. 1908.

This little book, consisting of 177 pages of reading matter, is divided into two sections: (1) Sterility, and (2) Impotence. It treats of a much-neglected subject in an interesting manner, and when we consider that between 10 and 25 per cent. of barren marriages are the fault of the husband, that fact being often discovered after the gynaecologist has subjected the poor wife to a prolonged, painful and dangerous treatment for sterility, we begin to think it is time more was written and known about this somewhat delicate subject. The general practitioner will find the book a help when consulted on this class of case. W. H. P.

Thought She Knew Him.—A short time ago a surgeon had three leg amputations in a week. The unusual number caused talk in the surgeon's household, and his little daughter Dorothy was greatly interested. A few days after the last operation the surgeon's wife and little Dorothy were rummaging in the attic. In a trunk was found a daguerreotype depicting a girl about eight years of age. The portrait, through a peculiarity of pose, showed only one leg of the subject, the other being doubled up under her.

"Whose picture is that, mamma?" asked Dorothy.

"Mine. It was taken when I was a child not much older than you are now."

"Did you know papa then?"

"No, dear. Why do you ask?"

"I thought maybe you did, 'cause you've only got one leg."—*The Delineator.*