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ATROPHIC RHINITIS.*

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THE synonyms of this disease are almost as numerous as the treatises that have been written upon the subject. Among these may be mentioned the following:

Atrophic catarrh, chronic atrophic rhinitis, chronic fetid rhinitis, cirrhotic rhinitis, dry catarrh, dysodea, fetid atrophic rhinitis, fetid catarrh, fetid rhinitis, idiopathic ozena, ozena simplex, rhinitis atrophica, rhinitis fetida atrophica, rhinitis sicca, sclerotic rhinitis, atrophic endo-rhinitis, etc., etc., and ozena.

The last mentioned is the most ancient, the most widely understood; and although it is simply a symptom of a local malady possessing a baneful constitutional influence, it may perhaps claim to have as good a title in the nomenclature of this disease as any that have been named.

The fact that the odor of ozena is limited entirely to a peculiarly diseased condition of the upper nasal passages is worthy of a moment of consideration. No other part of the body can produce a similar odor, and the question arises, is not the odor identical, although differing in degree of intensity, with that accompanying all chronic inflammations of the nasal passages—the intensity and foulness of the odor being dependent upon the severity of the disease, and the length of time in which putrefaction has been allowed to progress? The question may even be asked, is it not a normal odor a thousand times intensified and defiled by absolute neglect of putrefactive changes?

In introducing a subject of such wide importance as atrophic rhinitis, it may be interesting to browse for a little while among the records that have come down to us through the ages. Possibly it may impress our minds with the fact, that even in rhinology all the knowledge which we now possess is not of to-day.

Susruta, a learned Hindu, who lived centuries before the Christian era, speaks of a catarrhal disease of the nose which he healed by the use of various sternutatories and ointments. Some of his directions were very explicit. For instance, the patient was ordered to lie on his back and hold the tip of his nose with his finger, while his physician dropped warm oleaginous liquids into his nostrils. During this period the patient

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was not to become angry, nor speak, nor cough, nor swallow the oil, but to spit it out as it entered the throat.

That these ancient Hindus recognized the dependence of laryngeal upon nasal diseases is evident, for in Hessler's translation from the Hindu occur the following words:—"Nasale remedium morbos hominum sapraclaviculum ortos refrenet et organa sensuum pura atque re suavolus officere potest."

As an evidence, too, of the extent to which they were acquainted with ordinary sanitary laws, a quotation from Charaka will not be uninteresting. He says: "One should not eject the mucus or phlegm of one's nose in a place that is crowded."

Among the medicines used thousands of years ago by the Hindus as sternutatories may be mentioned, pepper, mustard, orris, ginger and assafoetida. (In his student days the writer of this paper was informed by a highly respected physician that the insufflation of the powder of orris root was excellent treatment for chronic catarrh.)

One of the methods for curing sneezing was to look at the sun in such a way that its rays would fall upon the mucous membrane of the nostrils.

While Hippocrates, the Great Father of Medicine, wrote with masterly erudition upon the science in general, he seems to have known little of the nose, although he is accepted by Celsus as the first medical specialist of our civilization. He looked upon the brain as a gland and believed it to be the origin of all catarrhal troubles. He also thought that the vaporous parts of the inspired air escaped through the sutures of the skull. Some of his cases are remarkable. For instance, one of habitual catarrh was cured in three days by coitus—though whether it was an ozenic case or not we are not informed—presumably not.

Cicero is perhaps the first to give any adequate description of the nasal passages. He says: "The nares, which are always open on account of necessary functions, have narrower entrances lest anything which might be injurious should enter them, and they are always supplied with a moisture not useless for arresting dust and many other things."

Of ozena he speaks very distinctly. He says: "There are ulcers around the openings and they have many crusts and a foul odor, which variety the Greeks call ozena. It should be recognized that it is hardly possible to cure this disease. Nevertheless these things may be tried. Let the head be shaved to the skin and persistently and vigorously rubbed; let it be bathed with plenty of hot water; let there be much walking; moderate food, nothing very sharp or very strong. Then in the nostrils let honey be applied with a small amount of resin of turpentine, which may be used on a probe wrapped with wool. Let this liquid be drawn in with the breath until the taste of it is perceived in the mouth. By the

use of this the crusts are loosened, which may then be removed by the use of sternutatories."

Celsus went further than this, and advised a method which some rhinologists practice to-day as a new and original plan of treatment. This consisted in saturating pledgets of cotton with various medicaments and placing them in the nostrils, to be retained there for a time and then removed. This treatment was to be repeated twice a day in winter and three times a day in summer. Celsus described even, although he did not endorse, the use of the actual cautery in certain cases of ozena—a method which also has its advocates among some present day rhinologists.

As a modern but graphic reference to this disease—though decidedly ancient in style of description—might be mentioned a reference in Zola's novel, "L'assomoir," in which he says of one of his characters: "She smells in her nose as if she had been sucking her feet."

Possibly a passage in the Talmud refers to ozena when it says "that the polyp shows itself by a bad smell in the nose."

Galen, who flourished a hundred and fifty years after Celsus, divided diseases of the nose into two classes, polypi and ozena, and the latter he described as a "disease attended by deep ulceration in the nostrils, emitting a breath of a bad odor."

Then came a long interregnum. Roman civilization had reached its climax, and with its decline and fall and relapse into darkness, sorcery and superstition, medical science ceased to advance. A retrograde movement set in, and the medical writings of the period were filled with descriptions of amulets (similar, perhaps, to the electric belts of to-day) and incantations, jumbled together with what was not forgotten of the learning of the ancients. Even Pliny recommends as a prescription, that "a man whose nose stinks should kiss the nostrils of a he-mule; and that a woman in a similar condition should kiss the nostrils of a she-mule."

It was not until the middle ages that marked progress was resumed, and in this probably the Arabs took the lead, collecting and translating all that was possible from ancient lore, and fusing it with the crude ideas of their own. The Italians, too, entered the race, the school of Salerno leading the way. Sometimes in their etiology these wise men broke out into rhyme as in Ordranax's translation of:

"DE RANCIDINE VOCIS:"

"Oil and raw apples, nuts and eels, 'tis said,
With such catarrhs as settle in the head,
And leading to a long intemperate course
Of life, will render any person hoarse."

Then comes the cure :

“DE REMEDIIS CATARRHI :”

“Fast well and watch, eat hot your daily fare,
Work some and breathe a warm and humid air ;
Of drink be spare, your breath at times suspend,
These things observe if you your cold would end.”

In A.D. 1306, Henricus de Amondeville, in his Manual of Surgery, thus described the olfactory lobes as a part of the brain and the true organ of smell: “It is a certain fossa just between the two eyes, under the upper extremity of the nose, where the said fossa begins. The reason for the creation of this fossa is twofold: (1) That it may receive the superfluities of the brain and that they may be expelled through it; (2) that in it the air carrying a sort of odorous matter may remain quiet until it is taken up by the organ of smell. From the said fossa spring two canals toward the mouth and palate through the ethmoid bone. The use of the said canals are therefore: (1) That when the mouth is closed there may be an inspiration of air to the lungs. If this were not so, it would always be necessary to keep the mouth open. (2) By blowing forcibly through these, the said seive-like bone, the ethmoid, may be purged of its filthy viscosities. (3) That it may aid in the enunciation of letters.”

To Vesalius, who lived about the middle of the sixteenth century, we owe our first exact plates of the nasal cavities. It is believed now that they are superior in artistic merit to anything published either before or since upon the same subject.

Ingrassias gave us the first description of the anterior ethmoid cells; and Colombo joined him in describing the inferior turbinated bones; but Casserius in 1610 described them all, superior, middle and inferior.

To Cardanus, a contemporary of Vesalius, we also turn for the first conception of the correct physiology of the nasal cavities. To quote his words: “The mucus that runs from the nose does not really come from the head, but very often is produced by the secretory organs of the nose and throat.”

Van Helmont, who lived a hundred years later, although considered an advanced student of the principles of medicine, was far behind Cardanus in accuracy of knowledge upon this subject. He says: “The mucosities which are expelled by the expectoration and in coryza do not come from the head, nor are they secreted by the arteries; but they arise from the superfluity of ailments which remain adherent at the upper part of the pharynx.”

Crude pathology still had its sway even at this late date, for Boerhave tells us that in ozena "the mucus, being corrupted, produces an ulcer which corrodes the adjacent bones."

Before entering upon the nineteenth century period, mention might still be made of some other methods of treatment at that time in vogue. Herodotus claims to have cured a girl suffering from ozena by copious nasal douching with "perfumed white wine in which were dissolved cypress, roses and myrrh." He also used nitrate of silver and alum rubbed up with honey and applied with a cotton probe.

Fabricius advises dry heat in the treatment of ozena. He says: "The iron canula is to be inserted in the nostrils so long as it will reach the end and equal the length of the ulceration, and occupy the cavity of the nostrils. Through this a glowing hot instrument is to be introduced which, however, should not reach beyond the canula. It should be so done that the hot iron heats the tube and through this the natural tissues and the ozena. It is not intended that the nose should suffer pain from this heat, but only that the ulcerated part should be heated to a point short of pain, in one having a good tolerance. This being perceived, the canula may be taken out of the nostril, the secretions cleaned off and then replaced."

This treatment was to be repeated as often as necessary until the parts were cleansed of crusts, the mucous membrane reddened, the secretion stimulated and the ulcer healed.

Coming down to the nineteenth century. Since the decline of the Galenic physiology, which taught that the air ascended to the brain and that the secretion dripped down from that organ, Schneider's more rational doctrines, which are akin to those of to-day, were accepted. But in accepting them, the fact that the nostrils were an essential part of respiration was lost sight of, and the warming, dust freeing, and moistening functions of the nose, upon which Galen laid so much stress, were largely forgotten. In fact it is only within the last quarter of a century or so that the value of the nose in the important function of respiration has been recognized, and Galen's deductions given their proper place.

Deschamps in 1804 is said to have published the first distinct work upon rhinology. In it he makes no mention of anterior rhinoscopy nor of the use of the nasal speculum. Still he recommends in ozenic cases the use of the cautery, when "the site of the ozena permits."

Many other books were published, including Cloquet's exhaustive historical treatise upon osphresiology or olfaction, before Piorry's work, "Ueber die Krankhieten der Luftwege," was published in 1844. This work contained a large amount of information upon the inner nose, and

is particularly interesting, when we remember that it was written at a period when anterior rhinoscopy was yet in its infancy and posterior rhinoscopy practically unknown. He referred the causes of nasal diseases to systemic conditions, and displayed much practical knowledge in the treatment of the disease under discussion. The crusts of ozena he soaked in oil to facilitate their removal, and dilated the nostrils with forceps to admit of greater light for purposes of diagnosis and treatment. He declared that one of the causes of rhinitis was the cutting of the vibrissæ and allowing free entrance into the nostrils of dust and other particles. He considered the application of cold water to the inner nose injurious. One thing worthy of notice is that he confused ozena with purulent disease of the accessory sinuses, taking the latter as the cause of the former, or the two as identical, a view which some rhinologists even of the present day assume to be true.

The advent of the rhinoscope. Although Signor Garcia gave his first full description of the laryngoscope in 1855, it was not until 1859 that Zermack turned his throat mirror upwards and demonstrated for the first time in the living subject the pharyngo-nasal cavity.

Reflected light and the nasal speculum about the same time gave a view of the internal nose, and a new era dawned upon this department of medicine. Investigations into the science and art of rhinology were commenced in all civilized countries, and each year added more or less to the sum total of knowledge.

In 1885 Lowenberg described a bacterium constantly found in the secretions of ozena, the presence of which has since been confirmed by such writers as Klamman, Thost, Seifert, Reimann and others.

Still it cannot be said that the etiological importance of a bacterium in the development of atrophic rhinitis has been satisfactorily demonstrated; notwithstanding the fact that germ life has been proven to bear such a relationship in the production of other physical diseases.

In more recent years, medical writings upon the subject of atrophic rhinitis have been as voluminous as they have been contradictory, and while each new writer may have added some new truth, the general tenor is so frequently adverse to views that others have accepted as facts that it is difficult in the vast volume to separate the wheat from the chaff; and it may be questioned whether the great subjects of etiology, pathology and treatment have any of them yet reached the point of definite scientific solution.

Coming down to a point upon which all are agreed, atrophic rhinitis may be defined as a chronic disease of the mucous membrane of the nose, primarily, as a rule, confined to the turbinal bodies, but gradually extending to the surrounding mucosa, and characterized by a dry, non-

ulcerative shrinking of the mucous membrane, glands and spongy bones. It is accompanied by a gradually lessening secretion, by the formation of crusts, and in the large majority of instances, by the development of fetor. Although the result is a permanent non-inflammatory shrinking, inflammatory action being absent, and the "itis" in the name a misnomer, atrophic rhinitis is not in itself an original, separate disease, but the result of pre-existing conditions, and is variously classified by different writers.

Sajous, Bosworth, Bishop, Coakley, Richards and others make no classification of the disease, dealing with it simply as a unit, varying in degree, as also in the intensity and persistency of the ozenic odor which so often accompanies it.

Lennox Browne, Shurley and others divide the disease into two varieties, rhinitis atrophica non-fetida, and rhinitis atrophica fetida.

While Kyle makes a distinction between primary and secondary atrophic rhinitis, the primary being a direct lesion of the part, a simple atrophy; the secondary either (1) an atrophy of the membrane resulting from a pre-existing lesion within itself, or (2) atrophy resulting from pressure from without itself. This writer opens up new ground for thought. In simple atrophy he claims that there is diminution in nutrition with lessened function and lessened size, though not necessarily the latter, as the size may be temporarily delayed owing to fluid distension, as in red atrophy of the liver. In it there is reduction in size of the cellular elements and possibly a numerical reduction; but there is still present the individual cell, which by improved nutrition and improved function may be restored to a normal condition. He believes that many of these cases originating *per se* can be cured, while the majority of cases, being secondary in origin and the cause rarely removable, are followed by degeneration, which is a process separate and distinct from atrophy, and one that can rarely be cured.

It is well to remember, however, whether we take atrophic rhinitis as one disease, existing in different cases in varied degrees of severity, or as divided into the two classes of rhinitis atrophica non-fetida and rhinitis atrophica fetida, or subject it to the other division mentioned, of primary and secondary, no difference exists in the actual process in the tissues concerned, as in all divisions the atrophic change is the same.

Etiology. This is a very wide question. It has engaged the attention of rhinologists and pathologists ever since the discovery of the rhinoscope, and although numerous and exhaustive articles have been written upon it, there is still much to be said, and it will be long before the last word in elucidation of the subject will be uttered.

As is well known, Bosworth believes that atrophic rhinitis has its origin in desquamative purulent rhinitis of childhood. He describes it as a catarrhal inflammation of the nasal mucosa, which, developing in the direction of a glandular atrophy, leads, eventually, to more or less complete destruction of the muciparous glands and follicles, together with the production of a cirrhotic condition of the mucosa proper, resulting in certain permanent and characteristic symptoms, the chief of which are abnormal patency of the nasal fossæ and the formation and accumulation of fetid crusts within the passages, of which condition the purulent rhinitis is the first and causative stage with Lowenberg's diplococcus merely an adjunct, the product of decomposition in the accumulated discharges.

J. N. Mackenzie disagrees with Bosworth's view and claims that atrophic rhinitis is always a result of pre-existing catarrhal inflammation. Hypertrophic rhinitis being the first condition followed by the atrophic process, the rapidity with which the one passes into the other being dependent upon the presence of some systemic dyscrasia.

Michael, many years ago, advanced the idea that the atrophic condition of the nasal mucosa was the result of pre-existing purulent inflammation of the accessory sinuses, and this theory after years of quiescence has been vigorously revived by Cobb of Baltimore.

In the writer's experience, disease of the frontal and maxillary sinuses, particularly when of long duration, have been attended by hypertrophy in the region of the infundibulum and ostium maxillare, and rarely if ever by atrophy. Richards, too, has rarely, if ever, seen atrophy follow accessory sinus disease. Coakley, while believing that the two often accompany each other, does not advance the idea that sinus disease is ever the cause of atrophic rhinitis. On the other hand, Grunwald is distinctly of the opinion that many cases of atrophy owe their origin to pre-existing purulent involvement of these accessory cavities.

Porcher believes that congenital syphilis is in many instances the cause; and that in other cases it may arise from pressure from antecedent hypertrophy, also from pressure due to accumulations within the nasal fossa.

Many writers affirm that the etiology is very varied, and that it may result from any inflammation of the mucous membrane, whether acute or chronic, specific or non-specific, whether excited by exposure to cold or the inhalation of dust or gas or irritant powders, provided the irritation be of a continuous or oft repeated character, and that the passages become so occluded as to prevent the free discharge of the secretions that have found a lodgment therein.

Shurly favors the idea that in some way it depends upon nutritional failure, and with this thought in view he has followed the practice of the application of galvanism within the nasal passages. He throws out the suggestion that an antecedent neuritis affecting the trigeminal nerve may have something to do with the primary cause of the disease.

Lennox Browne has nothing new to offer save a last suggestion that when there is unusual patency of the nostrils there may be a tendency to dermal reversion of the mucous membrane, consequent upon direct irritation of particles inhaled with the dry atmosphere.

Kyle lays a good deal of stress upon predisposing causes. Malformation, nasal deflection, septal spurs, ill-formed nasal orifices, imperfectly developed turbinates, may all have an influence in developing the disease. Of these nasal deflection is worthy of a special word. How frequently do we find one nasal cavity two or three times the width of the other, due to an immense curvature of the septum, presenting ozenic atrophy in the open nostril, while the other one, except for its narrowness, is normal? The inherited tendency toward the reproduction of nasal malformation would naturally be followed by inherited tendency toward the development of the disease. Other exciting causes he mentions are infectious disease, such as measles, diphtheria, scarlet fever, and occasionally typhoid fever. The disease may also be subsequent to chronic catarrh of the frontal, ethmoidal and sphenoidal sinuses, particularly the last named, or to disease of the maxillary antrum, whether the origin of the latter be infection from the nose or from a decayed tooth.

Sticker, entering more deeply into the causal relationship of this affection, endeavors to establish one between an atrophic condition of the nose and a similar condition in the pharynx, larynx, trachea, bronchi, lungs and pleuri. He shows that there is a general systemic condition underlying the atrophy of the mucous membrane, and of which it is only the superficial expression, and while it may have a predilection for the nose, it may apply to the whole respiratory mucosa. To this condition he has applied the name "Xeroses of the mucous membrane."

In this connection, the writer of this paper reported a case some years ago, in which the atrophic degenerative process extended gradually down to the trachea, involving the mucous membrane and eroding away the central portions of the upper two rings, so that immediately below the cricoid, the four little sharp points could be felt beneath the skin. In this case there was no history whatever of syphilis. It occurred in a young man of the age of 20. By thorough and continuous cleansing treatment, all irritative and offensive symptoms were kept under control. He studied medicine, graduated, practised his profession, and died ten years later of double pneumonia.

Freudenthal looks upon ozena as an autochthonous affection, which supervenes on atrophy. He also is credited with the remarkable statement that the invasion always takes place by direct transmission from the vulva.

Some, like Zaufal, Frankel and Cholewa, trace an etiological connection between the form of the skull and the nasal passages and atrophic rhinitis, basing their views to some extent upon anthropometric investigations. Meisser, while following a similar line, has carried out his measurements with greater accuracy and care, comparing the average facial measurements of all people with the average facial measurements of those suffering from ozena. The index of the face is taken as follows: First, the length from the fronto-nasal suture to the alveolar border of the superior maxilla; second, the breadth between the two malar eminences; third, multiply the length by 100 and divide by the breadth. This gives the index. By a large number of such measurements he establishes the fact that in German Switzerland, a great many people had an index of fifty or less. These he called cases of chamae-prosopia, while in sixty-four per cent. the record was over fifty. These he called cases of lipto-prosopia.

After obtaining these data, he proceeded to measure forty cases of atrophic rhinitis in the same way. He found that thirty-nine of them, or ninety-seven and a-half per cent., had a width of fifty or less (chamae-prosopia) while only one or two and a-half per cent. came over that figure—and the smaller this index the greater the ozena.

Meisser, from his own observations, corroborated by the evidence of other observers, finally draws the following conclusions:

(1) Rhinitis atrophica fetida, as a rule, is only found in those of a broad-faced type.

(2) In unilateral ozena the epithelium of the apparently healthy narrow side, at least in the region of the middle turbinals, is also metamorphosed.

(3) For the advent of the clinical picture of rhinitis atrophica there must chiefly be at work two factors, viz.: (a) Epithelial metamorphosis of the nasal mucous membrane; (b) chamae-prosopia, *i.e.*, wide nasal fossæ.

Hopmann and Gerber have also made measurements in their investigations into the etiology of this disease; but they are in reference to the relation of the septal measurements to those of the naso-pharynx. In Hopmann's forty cases of ozena the two were compared. Reducing these measurements to 100 for the sake of comparison, the average length of the septum was 70.9 and of the pharynx 29.1, while in sixty-one normal noses the proportion was 77.45 for the septum and 22.55 for a

pharynx. In Gerber's cases the difference was present, but not so striking, the average in ozena being 75.53 and 24.47 respectively, and in normal noses it was 78.63 and 21.37. The name given to the abnormal being platyrrhinia, or flat nose. Women are more commonly affected than men.

In reviewing the subject Gerber arrives at the conclusion that there is truth in Meisser's conclusions, as well as his own: "and therefore," he says, "the links of the chain, when properly arranged in their order, should be called 'chamae-prosopia, platyrrhinia, ozena.'"

Fletcher Ingals also dwells particularly upon the shrinkage of the bones and cartilage in this disease, so that in cases where there is no perforation of the septum its antero-posterior length may be so shortened as to produce the flat-pug or saddle nose.

As has already been said, atrophic rhinitis is essentially a disease that has its origin in early life, commencing as a rule between the sixth year and puberty. Many instances, however, have been mentioned of its occurrence even in infancy. Bronner reports several at the ages of two and three years which were not syphilitic. Lambert Lack has seen many cases in young children in which he believed the ozenic conditions were secondary to purulent rhinitis. And Moure affirms that atrophic coryza of an ozenic character in which the turbinateds are reduced to the size of ribbons is often hereditary.

Senile dry rhinitis should not be classed with the ordinary atrophic disease, as it is probably due to a general decline of the normal physiological functions of the body, the secretions being altered by the advance of years.

Of the many organisms that have been found in association with this disease, the following may be mentioned: Lowenberg's diplococcus, also Frankel's, Abel's and Hajek's. They are all of a similar character, and although looked upon by their discoverers as possibly possessing an etiological relationship, further investigations have not borne out the idea. They are, in all probability, simply the results of septic influence in the organic masses deposited within the nasal cavities.

In inoculations made from 30 cases of advanced atrophic rhinitis, Kyle found no special organism present, but was able to demonstrate the presence of a number of pathogenic bacteria. Among these Frankel's pneumococcus, Klebs-Loeffler bacillus, tubercle bacillus, bacillus fetida, as well as staphylococci and streptococci were all found. These were all considered to be of concomitant rather than pathological significance.

Among other views advanced as to the etiology of this disease, may be mentioned those of Zaufel, who claims that atrophic rhinitis or ozena has its origin in congenital deficiency in the development of the turbin-

ated bones; of Chatellier, who looks upon atrophy of the turbinateds as a rarifying osteitis; of Gelli, who scouts the idea of osteitis, and, like Shurly, refers the atrophy to interference with nutrition; also of Zuckerkandl, who, after examining the skulls of 250 children, did not find a single case of congenital atrophy, disproving the possibility of congenital development.

Pathology. The principles of the pathology of atrophic rhinitis as laid down by Bosworth twenty years ago are still in large measure accepted as correct. It is in minute pathology and in deeper histological investigations that advancement has been made. Bosworth tells us that the surface epithelium is decreased in amount, has become flat and desquamatory in character, with entire removal of the ciliated epithelial membrane in advanced cases. The adenoid layer is thinner than in the normal condition and is crowded with lymph corpuscles contained in a very delicate fibrous reticulum. The capillary vessels are small, scantily distributed, and usually empty of blood, while the acinous glands have become minute in size and diminished in number. The submucous layer merges with the adenoid layer into a fibrous construction, and has fewer lymph corpuscles, while the blood vessels, though few in number and size, are more prevalent than in the superficial coats of the mucous membrane. The prominent features are then briefly: decrease and change in epithelium, destruction of cilia and surface desquamation, decrease of adenoid tissue, lack of blood vessels, and destruction of acinous glands, with total disappearance of venous sinuses in advanced cases.

Other investigators of the same period differ little from Bosworth in their conclusions. Frankel finds disappearance of Bowman's glands, while the mucous glands of the lower turbinated remain unchanged. Krause finds fatty degeneration of the mucous membrane and the gland epithelium, while Habermann claims that the same condition extends to the acinous glands.

The idea that in atrophic rhinitis the connective tissue element is the first to suffer is a mistake, for while it may be the first involved, it must be remembered, as a physiological fact, that connective tissue is an essential and independent structure, and that it can exist without epithelial cells, whereas epithelial cells are dependent structures and cannot exist without connective tissue basement membrane support, and consequently, in atrophy must be the first to suffer. Following this is the connective tissue shrinkage with cirrhosis, desquamation, involvement of gland structure, atrophy and degeneration, due to the nutrition being cut off by the sclerotic or fibroid change.

When there is much shrinkage of tissue with wide nostrils, irregular cavities exhibiting bony walls, there is little tendency to hæmorrhage

even on violent irritation, the blood supply being cut off by the sclerotic condition. Kyle believes that when there is bone involvement—absorption of the turbinals—it is due to the pathological presence of a tuberculous or syphilitic condition, and that when ozena is a prominent symptom, with little or no alteration in the nasal mucous membrane, that the seat of the disease is probably one or other or several of the accessory sinuses.

According to this writer there is always at first an over-production of the connective tissue element. Up to this point it is not a true atrophy, but a simple chronic inflammatory process, resulting in contraction and interference with the blood supply, from which arise all the subsequent conditions. The process is gradual, irregular and uneven. First the capillaries are cut off, then the larger arterial twigs; after this the venous plexuses, until in the end they and the sinuses are partially or completely obliterated, the various glands likewise disappearing by a process of gradual absorption. The connective tissue is the last to yield, its place being taken by a fibrous membrane, which, the ciliated and columnar epithelium being lost, becomes squamous in type, reverting in certain cases to more of a cutaneous than mucous structure.

The basement membrane is always relatively less involved than the more superficial ones, but in the end, when uninterrupted, likewise becomes almost obliterated.

In regard to the vexed question of the relation between ozena and accessory sinus disease, Minder, a member of Siebenmann's staff as late as 1902, reports that he made fifty autopsies with special relation to the connection between the two. As a result of his investigations he agrees with the majority of rhinologists that when the two coexist the sinusitis is a result and not a cause of the ozena.

Underlying all change in the mucous membrane of the nose as well as in other parts of the body, there are definite physiological principles, well indicated in the following quotation: "There must be taken into consideration the general effect produced, not only in the mucous membranes, but in the entire system, by altered functions in any of the excretory or secretory organs. The human body in its process of metabolism is nothing more than a laboratory in which is manufactured physiologic materials, which perform normal physiologic functions." This expression of Kyle's, while expressed in regard to another catarrhal condition of the nose, is so universal in its application that it will apply with equal force to atrophic rhinitis.

Pathologically, Sir Morell Mackenzie believed that all cases of atrophic rhinitis were the results of previous lesions of the nasal mucous membrane. While Lennox Browne contended that many cases were

primary in their origin, although probably due to morbid diathetic conditions of the system, he instances an early evidence of the existence of the disease to be the disappearance of the nasal vibrissæ.

FETOR.

Among the explanations offered by different pathologists for the ozenic fetor, may be mentioned the following :

1. To suppurating discharges from the accessory sinuses. To which the opponents of this theory reply, that the odors produced by the two diseases are essentially different in character, and that when unaccompanied by atrophy of the nasal mucous membrane diseases of the accessory sinuses never produced the true ozenic odor.

2. To fatty degenerative changes which admittedly take place in the racemose glands.

3. To fermentative changes in the life processes of the micro-organisms of the tissues. The last theory is the one generally adopted. Lowenberg claims that the unique factor of the ozenic crusts is invariably associated with the presence of a large diplococcus. He has found it always present in ozena accompanying hypertrophy as well as in that of atrophy. In other cases of atrophy when the ozenic fetor was absent, the diplococcus was also absent.

4. To the theories already advanced as to the cause of the ozenic odor in this disease, and they can only be considered as theories, until one or other is proved to be correct after more elaborate investigations, the writer of this paper refers again to a thought already mentioned as worthy of consideration. We know that various regions and tissues of the body produce odors peculiar to themselves which cannot be produced under any circumstances elsewhere. For instance, the axilla, the prepuce, the vagina, the membranous cuticle of the first phalanges of the toes, all produce odors of their own, which in their normal and primitive forms are not objectionable, but when allowed to accumulate through foul and unhygienic conditions become horribly and disgustingly offensive. In the same way the breath of the young infant as he breathes peacefully through his nostrils has an exquisite perfume which can be produced by nothing else. As age advances this odor changes. Still it is always one peculiar to the nasal passages. When catarrhal conditions arise it is still further modified, but is always recognized as incidental exclusively to the nasal mucosa. Is not the odor of ozena the same odor ten thousand times intensified, and rendered nauseously pungent, by putrefaction due to neglect or unhygienic conditions? For the odor of ozena is as distinctive of an unhygienic condition of the nasal passages as the odor from between the toes is of a neglected condition of the feet, while by an en-

forcement of hygienic principles it can likewise be removed and kept under control. This view seems to be borne out by the fact that the odor of accessory sinusitis uncomplicated is not identical with that of atrophic rhinitis, neither is that usually produced by syphilis of the nose. This is simply an elaboration of Wyatt Wingrave's idea.

Histo-pathology. Two processes are at work in this disease: (1) A low form of inflammatory infiltration followed by sclerotic changes; (2) a simple and primary atrophy involving all the elements of the nasal and pharyngeal mucous membrane, and marked by gradual shrinkage of the mucous tissues, accompanied by the formation of crusts, but unaccompanied by ulceration or extension of the disease to the outer skin. Lennox Browne summarizes the morbid changes as follows:

1. Transformation of the normal surface cells into a thick layer of stratified squamous epithelium.
2. Disappearance of the hyaline basement membrane.
3. Early activity of lymphoid and small cell tissue, which later undergoes atrophy and sclerosis with thickening of the small arteries and obliteration of the capillaries.
4. Appearance of hyaloid bodies singly or in clusters, varying in size. In advanced stages these bodies grow larger, lose their special shape and break up into small irregular particles.
5. The gland changes vary from simple cloudy swelling of the secretory cells to complete disorganization and disappearance, due to invasion by inflammatory tissue. The ducts resist all changes until the disease is far advanced, when they are replaced by plugs of laminated keratin cells.
6. The osseous changes indicate an exaggerated osteo-porotic absorption leading to diminution in the bulk and excessive brittleness of the turbinal bones.
7. There is true degeneration of the nerve fibres.

Nature of the crusts. Together with multi-nucleated lymphocytes, nucleated and non-nucleated squames, there can always be found some of the following: Giant diplococcus, *Bacillus coli communis*, *Diplococcus pneumoniae*, *Staphylococcus pyogenes aureus*, *Bacillus fetidus*, *Bacillus of Freidlander*, *Bacillus of Vignel*.

Chemically the crust consists of mucin, cell globulin and phosphorus. Incidental pathological changes are gradual disappearance of surrounding lymphoid structures, such as faucial, pharyngeal, and lingual tonsils, caries of the teeth, smallness of thyroid gland, non-suppurative dry catarrh of middle air, together with general anæmia.

Underlying the minute histology of the disease itself, there are certain views with regard to the glands of the nose which in this connec-

tion are worthy of study. These were well exhibited in a recent article by Goodale. As he says, there are at the present time two views held. Stochr and Paulsen believe that the glands are mixed in character, some secreting mucus, others serous fluid. Schufferdecker claims that all the glands are of a mucous character. Golgi's investigations by new methods prove that there are two kinds, mucous and serous, the latter alone possessing secretory capillaries. Retzius and Mueller have gone further, showing that the presence of the secreting capillaries is a distinguishing feature of serous glands. In such glands there are in addition to the central lumen, delicate intercellular passages which do not reach the membrana propria. These secreting capillaries are without walls of their own, being simply bounded by surfaces of the cell bodies.

Some observers claim that the mucous glands are also supplied with secreting capillaries; but when specimens stained by Golgi's method are examined, the so-called secretory capillaries of the mucous glands are seen to be nothing but the walls of the mucous cells seen in profile. Another distinguishing feature is that while the secretory capillaries of the serous alveoli show marked irregularity in length as well as form and breadth, the latter particularly, the septa of the mucous cells have always precisely the same appearance. In addition to the glands of the nasal mucous membrane, canaliculi are also present for the transmission of the nasal fluid. They penetrate the basement membrane. These were discovered by Hieberg, who found them in the larynx and trachea as well as the nose. They are smaller than the capillaries, and run obliquely and freely under the epithelium. When the canaliculi lie close to each other, they are separated by two to four epithelial cells, having at the same time an irregular distribution. These canaliculi are more readily recognized in hypertrophic conditions of the mucosa when they assume larger proportions and are often connected by traverse or branching canals, having a direct relationship to the underlying connective tissue.

In the latter the adenoid layer is markedly developed with numerous thin strands of connective tissues rising obliquely towards the surface, the intervening spaces being filled with leucocytes which pass directly into the canaliculi and through the epithelium to the surface of the mucous membrane. The fluid on the surface, according to this view, is composed of a mixture of glandular secretion and the serum exudation flowing out through the basement canals.

Hence, according to Goodale's conclusions, the normal mucous membrane of the lower half of the nose presents the following characteristics: columnar ciliated epithelium with a well defined basement membrane, perforated everywhere by canaliculi running more or less obliquely. Many of the canaliculi contain polynuclear neutrophyle leucocytes. The base-

ment membrane passes directly into a loose connective tissue, the sub-mucosa of which exhibits irregularly outlined lymph spaces which contain many round cells. The glands are situated below this lymphoid layer and are formed of aggregations of muciporous and proto-plasmic cells of a degenerative character, together with capillary blood-vessels which run an irregular course.

The characteristic mucous membrane in atrophy (Goodale) is in marked contrast with the above. There is a thick compact layer of squamous epithelium resting immediately to the rete-mucosa without any intervening basement membrane. There is also little or no evidence of migration of leucocytes through the epithelium. The glands below the rete-mucosa are diminished in size and numbers. The mucous membrane is transformed from the columnar epithelial type to the squamous variety. The canaliculi are largely absent, and there is little or no evidence of diapedesis. The mucous glands are also either absent or diminished in number and size.

It would appear also that a great deal of negative light has been thrown upon the subject of the relationship between accessory sinus disease and atrophic rhinitis by the recent researches so carefully conducted by Logan and Turner and Lewis of Edinburgh. The subject of this investigation was "Suppuration in the Accessory Sinuses of the Nose: a Bacteriological and Clinical Research." In the personal investigations conducted by these writers, they found that in the majority of cases the healthy nose is free from pathogenic invasion. In cases where germ life exists, the staphylococcus is the one that takes the lead, followed by two or three others, such as pneumococcus, streptococcus and pseudo-diphtheria bacillus. Following this by an examination in noses affected by inflammatory conditions, the reports of many observers is given including their own. They found in all cases the pathogenic organisms to be the same in health as disease, the proportion present in the latter being the greater.

Next came an examination of healthy sinuses, particularly the antrum of Highmore, as the one the most subject to disease. This sinus as well as the frontal was found by Torne to be sterile in all of 22 cases examined by him within two hours after death—direct evidence that in a healthy condition these cavities are free from bacteria. This result was corroborated by other observers, as well as Turner and Lewis.

Then followed examination of similar sinuses affected by purulent inflammation, and here is the noteworthy result of the investigations of Stanculeanu and Baup. Their conclusions are that there are two varieties of empyema of the maxillary sinus, one with fetid pus due to anærobic microbes following on dental affections, the other of nasal origin with pus

not feild, and due to such organisms as the pneumococcus and streptococcus pyogenes. Hence they claim that it is possible to trace the source of the infection from the buccal or nasal cavities, according to the character of the pus and organisms present in it. The greater frequency of anærobic organisms in the mouth than in the nasal cavities leads some observers to support this view.

Following this, Turner and Lewis give the result in their own investigation of 57 antral cavities, and their conclusions are as follows: that while many pathogenic organisms are always present in these cases, streptococci, pneumococci, and staphylococci invariably take the lead. It is also worth remembering that these cases had a duration of from a few months to thirty years, yet in no case do they mention the presence of Lowenberg's diplococci, the so-called bacillus of ozena.

With regard to the comparison of the presence of organisms in the recent and long standing cases, in the latter streptococci were present in 80 per cent. and only 61 per cent. in the recent cases, whereas staphylococci were present in 84 per cent. of the recent cases, and in only 66 per cent. of the long standing ones, the pneumococci being in a similar amount in each. One remarkable feature is also dwelt upon, that quite frequently bacteria would be found in the antral cavity that were not present in the nose.

Still another reference might be made to this long and scientific article: while the writers refer at length to the influences that sinus disease and the presence of nasal polypi have upon each other, affirming it as their conviction that in the majority of cases the sinus disease leads to the production of the polypus, and not the reverse—so strongly advocated by some writers—they do not once allude in all their 57 cases to a single association between the disease of the sinus and atrophic rhinitis or ozena so-called. Furthermore, the facts, that streptococcus is the leading organism in the former, and is remarkable by its rarity in the latter, should also have their due influence in our search for correct conclusions.

Symptomatology. While there is so much diversity of opinion upon both the etiology and the histopathology of atrophic rhinitis as well as upon the treatment, writers are in the main unanimous upon the symptoms which the disease presents. The onset, commencing usually in childhood, is insidious, the early symptoms as a rule being unnoticed. There is first an increased discharge, both serous and crusty in character, and increasingly difficult to void. As the dryness progresses the retention of the crusts becomes greater, producing uneasiness and discomfort in the nasal passages without absolute pain. There may also be a certain amount of nasal occlusion due to the presence of the retained secretions,

accompanied by a constant desire to clear the passages by forcible expulsion either the one way or the other. There is also a gradual development of the characteristic mal-odor so generally found in this disease, the intensity of the odor being due not to the atrophy *per se*, but to the amount of, and length of time which, the secretions have been retained within the nasal cavities. As the disease advances, the secretions instead of being mucoid in character, become thick, foul and pasty, and accumulate upon the walls of the nasal chambers, until finally, being deprived of nearly all their moisture by the air of inspiration, they degenerate into crusts or slugs, which nature by all her efforts, unaided, cannot effectually expel. The fetor by this time may be intense, and the sufferer being an object of discomfort to everyone about him, and also to himself, not having as yet entirely lost the sense of smell, seeks the advice of his physician.

On rhinoscopic examination, the fossæ will prove to be enlarged to a more or less degree, according to the amount of atrophy or shrinkage that has taken place in the lower turbinated bodies, as the atrophy in the middle turbinates is usually only an extension of the primary disease. Grayish, greenish-yellow or brown crusts with the characteristic fetid odor will partially fill the passages. These may be so firmly adherent to the underlying tissues as to be difficult of removal, but when taken away, the attachment being only by adhesion, the mucous membrane will be found unulcerated—simply pallid, shrunken and unbroken.

Very frequently on examining these cases, the septum will be severely curved to one side, making one nasal passage wide and the other narrow, and it is in the wider fossa that the atrophy is the more severely developed. Sometimes the wide one will be the only one involved, as though when compelled to perform extra duty its power of resistance had been destroyed. Quite frequently, too, macroscopic examination will reveal one or both inferior turbinateds severely atrophic, while the middle ones are enlarged, nature seemingly endeavoring to compensate for the shrinkage of the larger bodies. In other cases, only small areas in a single nasal passage will be involved, and in rare instances a portion only of one of the inferior turbinateds will be affected, while not infrequently, in long standing cases, having all the characteristic symptoms, the middle as well as the inferior turbinals will have almost disappeared beneath the steady encroachments of the insidious disease. In still rarer instances, the septum itself has been known to shrink away until the two nasal chambers, with the turbinals almost obliterated, have become one huge cavern emitting a fetor whose real habitat should have been the inferno.

Dryness of throat, pharyngitis sicca, is always a result in severe cases, and as collateral events the faucial and pharyngeal tonsils may

shrink away, while the vault will become coated with a foul, tenacious mass of black and crusted material, which is very difficult to remove.

In long standing cases anosmia becomes complete, and in some even the sense of taste is not only impaired but lost. The atrophy will also extend to the contiguous sinuses, and even to the Eustachian tubes and middle ear, as different degrees of deafness and tinnitus aurium sometimes accompany this affection.

Schweinitz states that a large number of ocular disorders, such as blepharitis, kerato-conjunctivitis, and dacrocystitis may have their origin in atrophic rhinitis. Observers have also reported serious symptoms concerning the external ocular muscles and the refractive media which have been influenced directly by the atrophic condition.

Ulceration and perforation of the septum, which sometimes occurs in these cases, is not due to the disease directly, for the turbinals, the bodies always most seriously affected, are never ulcerated, but to the picking of the nose by the patient in his persistent effort to relieve himself of the crusts that so constantly accumulate.

The general effect upon the appearance in advanced cases is marked. The nose may be upturned, the nostrils wide, the bridge depressed, the alæ thin and flat, and the sulci separating them from the cheeks obliterated. Others have a dull, expressionless countenance, thick lips, a muddy complexion and enlarged glands, while a rarer number give no facial indication of the disease. Hoarseness and cough may be concomitant symptoms, as also may hebetude, incapacity for mental application, and general melancholy, from brooding over an affliction from a supposed hopeless and disgusting malady. In others it produces complete aprosexia.

Reflex influences. There are not many recorded. Carti, however, reports one of reflex vertigo due to the presence of crusts in the nose, which was relieved each time the crusts were removed—recurring as often as they were allowed to re-form.

Diagnosis. To differentiate atrophic rhinitis from empyema of the accessory sinuses, methods should be employed, used to diagnose sinus disease. If there is a distinct discharge of pus as well as crusts from the nose, this is also *prima facie* evidence of the co-existence of the two diseases, a condition which undoubtedly sometimes occurs. The use of the electric throat-lamp, microscopical examinations of the discharges, and exploration of the suspected sinus, would any of them help toward a solution of the question.

Clarence C. Rice writes upon the importance of distinguishing functional collapse in the nasal tissues from atrophic rhinitis. He believes that the most advanced cases differ from the mildest, not in type, but

simply in degree, while on the other hand there are many cases of what is called dry catarrh, which, being unattended by atrophy of any kind, can scarcely be included under this heading—as they, in all probability, are due to the general condition of the patient, the results of mal-nutrition which may arise from inadequate food, bad air, and unsanitary surroundings.

If vascular tumefaction occurs in well-nourished persons with more than enough blood supply, producing from fullness of vessels a tendency to nasal obstruction, then collapse may be looked for in anæmic, poorly nourished persons. The primary anæmia in the nasal circulation produces a degree of shrinkage, the nostrils are abnormally wide, air pressure is increased and temporary collapse is rendered more or less permanent. This condition may be looked upon as functional collapse or dry rhinitis, apart from atrophic rhinitis, and is of somewhat common occurrence.

The principal distinguishing features of the two conditions are the following: Whereas atrophic rhinitis commences usually during childhood, functional collapse is not often seen before young child life. Collapse without atrophy is observed in the poorer classes, that is among persons living amidst bad hygienic conditions—true atrophy among people of any class. The appearance of anæmia and general debility observed in collapse of tissue is not a necessary accompaniment of atrophic rhinitis. Simple dry rhinitis is not at all dependent upon sex, but upon the general condition of the individual and the surroundings. The sunken nose and wide nostrils accompanying atrophic rhinitis are not seen in simple dry tissue collapse. In functional collapse the nasal tissues are simply anæmic in color, fitting closely on the structures, but retaining their natural contour. In atrophy the color is gray and the turbinates having shrunk, their shape is more or less destroyed. There will be crusts in atrophic conditions, few or none in functional.

In the post-nasal space there may be mucous accumulations in functional trouble—crusts in atrophic. There is no mal-odor in the one, but ozenic odor in the other. Hyperplasia of the middle turbinate is apt to be marked in atrophic rhinitis, while it is absent in functional disease.

Diagnosis must also be made from syphilitic bone caries, the odor of which differs decidedly from that of the atrophied turbinates in atrophic disease. It must also be distinguished from the fetid catarrhal condition induced by the presence of rhinoliths or foreign bodies within the nasal cavities.

Direct inspection through the wide-open, tip-tilted nostrils, into the cavernous chambers, packed with foul discolored crusts, and emitting a horrible odor, should make the diagnosis positive, particularly when, added to this, the parts have been cleansed and the shrunken, pallid

turbinals are exposed. No other disease can simulate an advanced case of atrophic rhinitis under these conditions.

Prognosis. If it is taken for granted that all cases of atrophic rhinitis are the one disease, whether accompanied by ozena or not, and that they differ only in degree and period of development, the prognosis on the whole is not bad. Many early cases can be cured. The great middle class can be relieved of all offensive signs to their immediate associates, while they can be made comfortable to themselves for all time by the proper use of proper effort. The severe cases, even the extreme ones, can also be positively and continuously relieved.

In early cases, where the shrinkage is slight, and crusts have only commenced to form, with little or no mal-odor, thorough and repeated cleansing with slight and oft repeated stimulation of the affected tissues, will frequently effect a cure, which upon the exercise of ordinary care on the part of the patient becomes permanent.

In other cases, even in a more advanced state, where from deviation or malformation one passage has become much wider than the other, replacement of the septum to its normal position, accompanied by thorough and persistent cleansing, will likewise in many instances remove the disease.

When, however, the canaliculi are gone, the serous and mucous glands destroyed, the connective tissue shrunken away, the arterioles obliterated, the venous plexuses and sinuses dwindled to shreds and the turbinal bones shrivelled, a cure is out of the question. The conditions can be relieved and made comfortable for the patient, but will necessitate, as regularly as attention to toilet, constant and systematic treatment; for it must never be forgotten that the regular inspiration of dry air through the nostrils will always demand a larger amount of moisture than the shrunken and atrophied tissues can produce.

Still even in these cases, give her a chance and nature will do her best. Remove all internal pressure, keep the parts perpetually under hygienic conditions and do this for years—yes, a score of them if necessary. Then the result will be very manifest, and a cure, or almost a cure, in some instances may be accomplished.

In all these cases, there is one hope to look forward to. The comparative immunity to the disease which middle age affords. And it should be the surgeon's aim to keep every case of ozena in his charge under complete control until that period arrives.

Treatment. This may be divided into general and local. If we accept "chamae-prosopia, platyrrhinia, ozena," as the typical disease, it would seem as though we must accept atrophic rhinitis as a local manifestation of a systemic condition. Possible by improving that condition

we may arrest the progress of the *chamae-prosopia*, and the *platyrrhinia*, and by judicious local treatment keep the *ozena* in abeyance. But the *statu quo* of the former two will have to be contended against. Hence our object should be to place the patient in the highest condition of health possible, with the determination to have him come out conqueror, notwithstanding the odds.

General. The physical condition of patients suffering from severe forms of atrophic rhinitis is frequently below *par*. Anæmia is often present, with the blood deteriorated, the muscles flabby, the skin pallid and the digestion poor. The bowels, too, are often sluggish in action. All these conditions should be remedied by appropriate tonic and laxative treatment. At the same time the circulation should be improved and the skin made to perform its functions more perfectly by daily baths and vigorous friction of the surface. Cold baths in all cases are not appropriate. If followed on each occasion by brisk reaction, they should be used, but not otherwise. A cold bath followed by a chilled surface and coddling by the fire will do more harm than good. In these cases the baths might be at longer intervals and tepid, while the daily rub over the whole body with a coarse towel should be well borne and attended by good results.

The fact that bacterial life is so redundant within the nasal accumulations, has led some observers to advocate antitoxine treatment. Ten years ago Belfanti and Della Vedo were the apostles of this plan. For a while it had strong advocates, but like many other things it lapsed into desuetude from lack of good results. How an antitoxin injected into the body could prevent the generation of bacterial life in the accumulations that are practically outside the body is a question.

Among systemic remedies might be mentioned climatic change. In the writer's belief this, to be beneficial in cases of atrophic rhinitis, should always be to regions in which the air is in possession of a high saturation point. The seaside and life on the ocean would have the additional advantage of the saline atmosphere. The reasons on both points are too obvious to require explanation. Change to an elevated dry atmosphere in this disease could only produce an aggravation of the symptoms.

Of internal remedies, the iodides, particularly that of iron, in anæmic cases, are often productive of good results, and general systemic tonics are nearly always required.

Local. While not wishing to undervalue the legitimate importance of general treatment in atrophic rhinitis, local treatment is of infinitely more value. In severe cases the systemic dyscrasia is largely due to the pernicious influence of the *ozenic* condition, and that being put under efficient control, the inhalation of fetid atmosphere, and the deglutition

of coagulated secretions in a more or less state of decomposition being at an end, the general health should improve, even without further medical treatment.

In local treatment, efficient washing by the use of aqueous solutions is of primary importance. Simple sterilized water may be used or mild alkaline sprays. They should be aseptic, not antiseptic; if the latter, the amount of drug necessary to destroy germ life would seriously injure the atrophied nasal tissues with which they would come in contact. These solutions may be used either as sprays directly into the nasal passages, or in the form of douches or by means of the post-nasal syringe. In either of the two latter, they should be used at a blood temperature. As sprays the ordinary temperature of the room will suffice. In severe cases attended by the formation of crusts, the writer is a strong advocate of the use of the post-nasal Davidson syringe, the fluid used being hot sterilized water. After placing the tip of the instrument well behind the palate, a method which can be readily acquired for personal use by the patient, the head is tipped well forward, and a continuous stream poured through the nostrils until the secretions are washed away, or at least loosened from their attachment. After this the parts can be readily cleansed of what remains by the use of the cotton holder and reflected light. When using water in this way, the writer has never known injury to occur to the middle ear through the Eustachian tube as a consequence, but he has in several instances from the use of the ordinary douche.

After thorough washing of the nasal cavities by the use of the atomizer and post-nasal syringe—one in which a plunger is never used—together with the final cleansing by the cotton holder, spraying the cavities freely with one of the hydro-carbon oils is not only soothing to the tissues, but grateful to the patient. Of these, simple albolene, unmedicated, is as good a one as can be had. The writer has used it for many years and has never found it productive of evil results. Although it may be in no sense curative, it is protective. By forming an oily film over the atrophied tissues, it protects them from the arid effects of the dry air inhaled. It is in this that the patient experiences comfort from its application. And the aridity for the time being absent, there is a chance for recrudescence in cell development, however slight, while the protective coating is present. At intervals the use of the oil may be suspended, its place being taken for the time by a solution of 25 per cent. of glycerine in water, a preparation which has for its object the encouragement to a return of normal exosmosis. The simple treatment thus outlined should relieve all cases, and if faithfully carried out will not only give comfort to the sufferers, but be attended with a certain measure of permanent success, however small that measure may be.

But patients and physicians want tangible and positive results, and as a consequence innumerable remedies have been used, and are still used, in the vain hope of accomplishing the impossible. As Charles Knight so forcibly says, "New detergents, new stimulants, new astringents, new antiseptics have followed each other only to be abandoned in disappointment, until a large proportion of practitioners have come to the conclusion that about all we can do is to 'keep clean.' "

Hence it would be useless to attempt a category of the various medicines referred to; but as syphilis, struma and alcoholism are often predisposing factors in the etiology of the disease, it would be better to direct attention to the treatment of these conditions, than to practice useless medication of the nasal passages. Still the application of medicines is in some cases necessary and advisable, and the general question arises, in what form should they be applied? In solution or in powder? To quote Knight again, "It is unreasonable to ask a perverted secretion to make a solution for us which may be readily prepared outside the body." He also believes, while condemning general intra-nasal medication, that normal salt solution is preferable as a cleanser to the alkaline solutions already referred to.

Of the drugs that are at the present time most favored and to be used as sprays after the cleansing of the passages, the following might be mentioned: Menthol in albolene 1 per cent.; formaldehyde 1 in 5,000 parts of water. Others perhaps worthy of note are preparations of formalin, ichthyol, and gomenol, some of them in all probability to follow the fate of their predecessors and be discarded. Peroxide of hydrogen, however, will probably remain on the list. Stucky reports success from a combined systemic and local treatment of his own proving. Whether he considers his cases to be of syphilitic origin or not, he believes in pushing constitutional treatment vigorously by the administration of large doses of iodide of potassium, keeping his patient well under its influence for several months. This treatment is accompanied by the use of crude petroleum as a spray to the nasal passages. Being used at regular intervals, the results in his hands have been more satisfactory than the use of aqueous solutions has been.

Hallopeau reports that the fetor in ozena disappears in a few days by the use of irrigations containing 40 grains of methylene blue to the litre. The same might be said of almost any thorough cleansing treatment faithfully followed out.

Mechanical treatment. This, too, has its place, and is worthy of careful consideration. It may be divided, as Bryson Delavan has said, into: (1) Treatment by mechanical means, such as tampons, plugs and bougies; (2) Removal of the diseased membrane by means of the curette; (3) Treatment by various forms of electricity.

In reference to the first of these divisions, Gottstein recommends, after thorough cleansing has been accomplished, the insertion of pledgets of absorbent cotton into the dilated nasal passages, the object being to reduce the amount of air admitted at each inspiration and thus diminish its drying effect upon the shrunken tissues, these pledgets to be frequently renewed. Greville MacDonald advocates the use of tampons to diminish the barometric pressure. These are to be worn several hours a day, limiting the lumen of the passages, while the patient persistently breathes through the nostrils, and by this means stimulates the nasal tissues to a freer blood supply.

The second method, that of curettement, only applies to localized areas, partly hypertrophic, partly atrophic. These may be located on the superior and posterior part of the septum, also at the anterior end of the middle turbinal. When resisting other methods of treatment, light curettement may be advisable, although extensive removal of tissue should never be attempted.

The third reference to the use of electricity is a much larger subject and one of scientific importance. It has found favor to a more or less extent in the treatment of atrophic rhinitis in four different ways:

(a) By the use of the electro-cautery. This is rarely applicable. The repeated singeing of the tissues, at one time advocated, is now acknowledged to be a mistake. Occasionally, however, a membranous band, the remains of a former hypertrophy, may be severed, or a boggy, unhealthy tissue stimulated to more normal action by its use, but these cases are rare.

(b) Vibratory massage introduced by Braun of Trieste several years ago. This can be done either by electric or hand vibration, and is worthy of more careful consideration than it has heretofore received. In the opinion of the writer, it is an excellent method of stimulating the atrophied mucous membrane after thorough removal of the crusts, and when repeated daily is productive of good results.

(c) This is the direct application to the nasal mucous membrane of the electric current, whether constant or interrupted.

(d) Yonge and Frederic Cobb are enthusiastic supporters of interstitial electric treatment known under the title: "Cupric Electrolysis."

After thorough cleansing of the passages, cocaine is applied to each cavity. Then the copper needle attached to the positive pole is inserted into the middle or inferior turbinated and the negative steel needle into the septum. The strength used is from 3 to 10 milliamperes and the time of each seance about ten minutes. In Young's experience five seances were the maximum required in any case. Some of his cases are reported cured, others relieved, and one death is recorded as the result of the treatment. Cobb reports more favorable results.

In the light of mechanical treatment, preventive measures should also be given their proper value, and obstructive lesions within the nose or naso-pharynx should be rectified before they have the opportunity to culminate in so severe an affliction as atrophic rhinitis. In the same way septal deformities if removed in early life would often prevent the development of one-sided atrophy.

Other methods of treatment that have recently attracted a large measure of attention have yet to be noted. Stuart Low has devoted some attention to the use of mucin in this disease, given internally, and in the limited number of cases in which he has tried it, he found its influence beneficial. In this, his experience is corroborated by that of James E. Newcomb, who looks upon the administration of mucin as something of which more will be heard in the future.

Lake, Dupond, Broeckaert, and others have, during the most recent years, tried the efficacy of paraffin injections into the mucosa of the turbinateds. Inasmuch as this method had been used with a measure of success in removing external deformity of the nose, it was thought that it might be even better adapted to relieve the collapse of the turbinal tissues arising from atrophy of the mucous membrane. A few cases were tried with apparent success, and the successful operators became enthusiasts, Broeckaert leading the way. By the first of the present year he had treated more than one hundred cases, and after this large experience, he claims it to be the best method by all odds of treating atrophic rhinitis.

Broeckaert, however, does nothing by halves. In the large majority of cases he claims a cure, but when the sinuses are seriously affected the paraffin injection does not cure the ozena. Then, when other measures have also failed, he resorts to what he terms the radical operation. After opening the nasal fossa by a lateral incision, he resects the nasal bones and the nasal process of the superior maxilla, removes the ethmoid, opens and cures the sphenoidal sinus and finally removes the middle and inferior turbinals with the inner surface of the antral wall. All the mucous membrane is curetted, the cavity packed and the wound sutured up. Broeckaert has performed the operation only in two cases and is awaiting results(?)

While many operators, including the last mentioned, use heated paraffin, Andrew White claims that by a special device cold paraffin can be used equally well, thus avoiding the danger of embolism, which always attends the use of the heated fluid.

Paraffin injectors, however, are not having it all their own way. Kirschner, of Berlin, pertinently says: "Even when paraffin is being tolerated for some length of time without doing harm in the neighborhood, a brief consideration of the fate of the young connective tissue which becomes developed during the organization of the foreign body

must show how fallacious are the therapeutic surmises which have led to the use of paraffin."

Sir Felix Semon says that every surgeon who has made a large number of such injections should ask all his patients some years later to show themselves for re-examination—so that a correct opinion may be formed of the lasting effects of the paraffin treatment.

Both these observers were referring mainly to the use of paraffin in the treatment of the external nose. Still the questions would apply equally well to its use in the treatment of atrophic rhinitis.

Samuel Iglauer has recently advocated another ingenious device for the treatment of this disease, which, owing to its originality and the painstaking effort with which its author has endeavored to make it a success, is worthy of mention. Its usefulness is based upon the similarity of chemical composition which exists in the salivary and nasal secretions. The operation consists in producing a large fistulous opening through the hard palate and the floor of the nose. This artificial sinus is provided in due course with a rubber perforated plug and an oro-nasal canula, through which the patient forces saliva to lubricate the walls of the turbinals. Saturation of these bodies with this fluid, and in this way, is said to be beneficial. Iglauer has treated several cases by this method; and although the improvement has been slow, to use his own words, "the after treatment very tedious and trying to both the patient and the surgeon," yet he believes he has met with an encouraging measure of success.

In concluding the discussion of this large and important subject another word may yet be said. In reaching out toward new lines of treatment, is it not one's duty to remember the great physiological and pathological principles upon which all successful treatment is based? We have in this disease to do with a tissue whose physiological power, nay, whose very existence has been in large measure destroyed. The secreting power of the mucous membrane is gone, and yet every inspiration demands that it should fulfil its duty as righteously as it did in health. No power we possess can restore the canaliculi and secreting glands that are lost. *Vis medicatrix natura* must do the work, if done at all, but the physician and surgeon can help with a wise and progressive conservatism if he is able and willing to stand by his guns. And herein lies another question, how much is atrophic rhinitis due to a civilization which forces its people to breathe a dry and vitiated atmosphere? And how much can physicians, as authors and supporters of preventive medicine, do toward extinguishing the evil? True it is that *ozena* dates back through the ages, but *Sasruta* spoke of civilized Hindus; and Hippocrates, Celsus and Galen prescribed for Greek and Roman citizens. We do not hear of

atrophic rhinitis among native Indians or South Sea Islanders or Zulus, but we have it with us, as they had it of old, in our civilized and cultured life, aggravated by the dry air of our homes. There are hundreds of thousands of little hot air furnaces, scattered up and down the land, heating the houses of the people. Each one is supplied with a little iron pot, placed low down by its side, and calculated to evaporate a few quarts of water in the twenty-four hours; whereas, to make the dry air properly breathable and sufficiently saturated with moisture, three or four times the amount should be evaporated in the same period of time. The more the moisture in the air the less will be the demand upon the serous glands and canaliculi of the nasal mucosa; the less will be the tendency to aridity in the atrophied mucous membrane; and quite possibly the less tendency will there be toward initial development of atrophic disease.

[N.B.—The writer particularly desires to acknowledge his indebtedness to the works of Jonathan Wright for much of the early history of atrophic rhinitis referred to in this paper.]

ELECTROLYSIS AND THE NERVOUS SYSTEM.

By Sir JAMES A. GRANT, K.C.M.G., F.R.C.P., London,
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IN 1854, when a student at McGill University, my attention was directed to the marvelous operations of the nervous system, since which time I devoted spare hours to the problems of this intricate structure. Tear and wear are the result of both mental and physical strain, at no time more marked than in the present century. For many years, I applied electricity in the ordinary way, frequently with beneficial results, without knowing exactly the why or the wherefore.

The power of the galvanic current to decompose water was discovered and first described by Nicholson and Carlisle in 1800. In 1806 Sir Humphrey Davy presented to the Royal Society a lecture on some chemical agencies of electricity and the following year announced the discovery of the decomposition of the fixed alkalies. The phenomena of electrolysis are due to a modification, by the current, of the chemical affinity of the particles through which the current passes, causing them to undergo decomposition and recombination. In the electrolysis of inorganic substances, it cannot be expected to solve the mysteries of life and disease. As the body is largely composed of water, holding in solution salts of potash and soda, it thus becomes an excellent electrolyte. The current of a dry battery transmitted by an ordinary neurotone, is the simplest and most efficient method of electrical application. The umbilicus may be considered *the storm centre* as far as collateral influence

on the sympathetic system is concerned, as here the solar plexus approaches nearest the surface through its many filaments which in turn accompany all the branches given off the abdominal aorta. It also interlaces with the nerve fibres of the phrenic plexuses; gastric, hepatic and splenic plexuses; suprarenal and renal plexuses; superior mesenteric plexus; spermatic plexuses, and inferior mesenteric plexuses. Although according to Bastian a wide basis of positive knowledge does not exist, it is accepted that the sympathetic system of nerves, with its double ganglionated cord and great ganglionic plexuses is, to a certain extent, an independent nervous system, penetrating deeply by its roots into the cerebrospinal axis. Its fibres are conducted to and from the viscera along the course of the blood vessels. The peripheral ganglia are dominated by a still higher regulating centre, situated in the medulla oblongata, in relation with all the vasomotor nerves throughout the system. Although the nature of its relations with the medullary centre is still uncertain, the fact that the fibres of the sympathetic are mixed up on the vessels with those having a vasomotor function and have to do with the calibre of the blood vessels generally, take part in the activity of all the glandular organs, in the movements of all the hollow viscera, and in the nutrition of the tissues generally, places the sympathetic system in the front as a central motive power. These are the circumstances which count in the operations of the system. When the tear and wear can be so changed by electrolytic action as to afford the freer transmission of normal nerve force, the constitutional changes for the better become most marked.

CASE I. R. C. McC., aged seventy-one years, an officer in the civil service, Ottawa, was attacked fully seven years ago with a cough, shortness of breath, with a general sense of muscular weakness, and reduced ability to walk with usual strength of limbs, the gait being changed to a short and rather feeble step. There was no evidence of marked muscular atrophy, but rather of defective muscular power of locomotion, and of lessened normal vigor as to contractility. This condition continued more or less for a period of fully five years. In regard to sensory functions, there were no important subjective phenomena. In the entire body all kinds of skin impressions were perceived readily and with normal acuteness. Eyes were perfect as to vision, and there was no straining whatever; sight was acute, both as to form and color, pupils were equal and reacted perfectly to light. Motor condition was equal on both sides of the body. Knee jerks were normal, and not in any way exaggerated; there was absence of ankle clonus. Voluntary movements in face, arms and hands were tolerably well performed. The patient stood steadily, with no marked change, in closing eyes. As to faulty condition in the spinal cord

or higher sensory tracts accounting for the short steps in his gait, the fact of there being no altered sensibility of other kinds precluded such a possibility. The general symptoms, being functional in character, favored disappearance under treatment. Anæsthesia of the mucous membrane of the conjunctiva or cornea was not at any time present. The pupils, natural in size and normal as to action, and the various media indicated no disease whatever. The gait was quite simple in character, perfectly regular, very short steps, with no signs of unsteadiness, and no zigzagging in leg movement. After careful consideration it was thought that the chief source of difficulty pointed towards faulty action in the nerve centres, resulting from the accumulation of tear and wear in past years, obstructing in a degree the normal transmission of nerve power. Electrolytic treatment through the solar plexus, given every second day for three weeks, brought about an entire change for the better in every particular. The patient now walks with ease and comfort, enjoying the gait of years past. His face regained its former red color, owing to increased power of the vasa vasorum. The improvement in his general condition was most marked, appetite was good, cough and breathing much relieved, constipated bowels had become more regular. Sleep was composed and natural. His life history showed a temperate and regular man, free from any syphilitic complication.

CASE II. Mrs. A. K., aged eighty years, well formed, and of moderate stature, generally enjoyed good health, and was the mother of one child. Five years ago, for the first time, the patient found the power of her limbs not as vigorous as usual, but this fact was not attended by pain or evidence of muscular atrophy. She was unable to walk any distance without inconvenience and rapidly developed fatigue. The symptoms were attended by considerable shortness of breath, and apparent inability to expand the chest with accustomed vigor in the respiratory process. Cough, expectoration, or any evidence of organic pulmonary or cardiac disease were not present. At times, during the past two years, she experienced a sense of dizziness, chiefly during the night on movement of the head, which circumstance interfered with her usual quiet rest. The other functions of the body were normal, appetite was good, bowels moved regularly, and urine was voided in normal quantity. Pulse was full, easy and regular, and not changed by altered position. Memory was still retentive, and eyesight was normal. On January 4, 1907, she was placed under treatment, which was given every second day for a period of three weeks, each application of the neurotone to the moistened umbilicus not occupying more than ten minutes, and the power graduated according to circumstances. The change for the better in the entire system was most marked, dizziness disappeared entirely, breathing be-

came normal, and the power of the limbs was so restored that she walked freely to church and otherwise, without any difficulty. Facial expression was quite changed for the better, and the cheeks presented a shade of color, owing to undoubted increased activity in the capillary circulation.

CASE III. Judge E., aged seventy-nine years, father of a large and healthy family. The patient was of ordinary stature, regular conformation, and usually enjoyed vigorous health, owing to entire absence of organic disease. During the past two years there had been a general feeling of malaise, with disinclination to engage in the active efforts of business, associated with a degree of mental depression, chiefly owing to the changed habits of life. The patient was unable to walk any distance with his usual activity. Pain in body or rheumatic complication were absent. Sensory organs were perfect as to functions. For many years he was a leader in a church choir, but the vocal cords for the past year did not respond with their usual vigor. After ten days' treatment the entire strength of the system was restored, and locomotion became as perfect as for years past, the voice also regained its power and tone, and he returned to his usual duties and responsibilities with ease and comfort.

CASE IV. H. G., aged seventy-eight years, was a tall, spare man; had been patent solicitor for a period of forty years, during the greater part of which time he enjoyed excellent health. Family history was unimportant, his parents enjoyed a good old age. Social surroundings were favorable. Alcohol and tobacco had been used only in moderation. Digestive power was moderately active, also the alimentary canal. Other functions of the system were undisturbed. The patient was of neuro-sanguine temperament, with alert manner. Latterly his expression had been one of anxiety and depression. As to the circulatory system, he experienced for several months a feeling at times of faintness, with feebleness of cardiac action, but unattended by cardiac murmur. Pulse became weak, with low tension between beats, but no thickening of vessel walls. Respiratory system presented no abnormality, except at times defective power as to thoracic expansion. Integumentary system was natural. Disturbance of equilibrium as to gait, except slow and weak for some months, such condition being gradually developed, was absent. Cerebral and mental functions were normal. Sleep was usually composed, and no indication of lesion in sensory centres could be observed. Pupils were of normal size and acted naturally. Some years ago he experienced weakness in sight, which under neurotone treatment greatly improved. On September 13, 1906, he was placed under treatment, which was given every third day for four weeks. At the expiration of this time a marked change for the better was undoubted, and in six weeks he increased in

weight fully twenty pounds. He now walks vigorously, feels in excellent health and spirits, and conducts his business with usual mental and physical activity.

The daily, in fact the hourly, changes in the component parts of the human body are mysterious and difficult to define, and nowhere more so than in the nervous system, the centre of thought, intellectual power and locomotion. My object in producing this paper is to sift a portion of the wheat from the chaff, and define a few of the limitations and possibilities of electricity. One point is certain: where damage to neurones or their nuclei have cut muscle fibres off from the normal source of stimulating energy, electricity is of little account, as far as maintaining muscular contractility is concerned. The reaction of degeneration is characterized by loss of excitability in the nerves and of the excitability to rapidly interrupted currents in the muscles. The reaction of degeneration is of great moment, and when present a lesion in some part of the nervous tract is readily diagnosed. In such conditions, electrolysis is useless. In nerve degeneration, when the induced current fails to meet with any response, it is called the reaction of degeneration. Weakened muscle cannot be strengthened by too strong a current, and such action must be avoided. So also with weakened nerve tissue. The power of the current must be graduated in proportion to the strength of either muscle or nerve.

“There is a great probability that a nervous impulse may be a change propagated by electrical agency, and even in its essential nature, an electrical phenomenon, a travelling and temporary dislocation of pre-existing discrete particles, and not a travelling process producing new and differently gifted particles from the old.” It is as solutions of electrolytes confined to minute cylinders, that nerve fibres have a most important interest, and yet the characters of these solutions are beyond the reach of methods of ordinary chemical investigation. In the transmission of the electric current, it is well to be aware of the remarkable discovery of Du Bois Raymond, that the whole longitudinal surface of the individual nerve fibre is probably equally positive, and the whole transverse surface uniformly negative. In order to intensify the conduction of the electric current, moisture is not only necessary externally, but is well provided for internally, as the nerve fibre is, throughout, a moist conductor. Nerve fibres are in fact only finely drawn processes of cells, containing inorganic salts within them, and the electrical conductivity is provided by the electrotonic currents and by their distribution. The axis cylinder of the nerve fibre is a better conductor than the tissues which ensheath the fibre, and more electricity, in fact, is carried or conveyed along the axis cylinders than is at the same time carried by the other tissues of the nerve. The electrical phenomena of nerve depend entirely on the inorganic salts which

it contains, and from recent investigations it has been proved that the nerve trunk has three kinds of conducting material, an external medium of poor conductivity, a dividing membrane, and an internal solution of conductivity of a higher order than that of the external solution.

Recent investigations as to the physical conditions present within the nerve fibre, in the axis cylinder, have pointed out the existence of a remarkable condition of proteid material in a state of colloid solution, in some way a possible store of potential energy. In this direction demonstration of the potassium ring of McCallum, surrounding granules within the nerve fibre, is most interesting and important, in relationship with solid colloid masses in aqueous solutions of salts. Such electrolytes, even by a limited degree of motion, tend to diminish the usefulness of an electrical current, transmitted through the colloid solution. A single fact, which dominates all, is that nerve is a material adapted for the transmission of energy from point to point throughout the entire system, resting upon the undoubted presence of inorganic salts, as permanent constituents of the axis cylinder.

In no part of the human system are the irregularities of life more marked than in the alimentary canal, where the defences of the organism permit the ingress of bacterial toxins. In this tract the blood-making process becomes interrupted, through the non-elimination of normal nerve power. Under such circumstances the perfectly stable nervous system is a rarity. Here particularly electrolysis becomes an important factor, giving new life and activity by establishing beyond doubt an average neuropsychic equilibrium.

The important fact demonstrated in the cases reported is that blood was actually made, by the direct application of electricity, through the abdominal walls, to the bloodmaking centre, and thus restoring the power and efficiency of the ganglia, taking part in the remarkable process of blood formation.

A most important point in the production of intestinal trouble is rapid eating of food. Man's efficiency in the duties of life is due in a great measure to the precautions in the use of suitable food, guarding rigidly the varied process of digestion. Clearness of brain and strength of muscle are gained by living close to Nature. How frequently food leaves the stomach for the alimentary canal, unconverted into normal chyme. This semidigested material gradually produces results far reaching in character. Dilatation of the colon, partial or general, frequently follows. The gas generated in the dilated colon, the outcome of imperfect assimilation, reflects a poisonous influence on the alimentary ganglia of the nervous system. About this attractive region takes place the mysterious conversion of vegetable and other food products into blood. The nervous

system plays an important part in this remarkable chemical transformation, histogenetic in character. This entire process is subject to defeat by surrounding abnormal conditions. A gradually debilitated state of the system frequently follows, marked by moderate œdema of the extremities entirely outside of cardiac, hepatic, or renal complications. Under such circumstances the local application of electricity to the abdominal walls brings about gradually a decided change for the better, the result of restored energy, to the ganglionic centres, marked by subsidence of the dilated colon and the gradual and complete disappearance of serosity in the legs, owing to increased activity of the absorbents. I have frequently observed in regions of the limbs a lessened degree of sensation to the electric current of short duration. This defective electric response is interesting in the light of the *clefts* or *indentations*, in the medulla of the axis cylinder, defined as small irregular masses, separated by fluid (Foster, *Physiology*, p. 122). Such conditions may account for an imperfect nervous impulse, the importance of which cannot be overestimated, providing the sudden return of complete sensation is the result of electrolytic action, restoring the continuity of the medulla of the axis cylinder.

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THE CANADIAN AND ONTARIO MEDICAL ASSOCIATIONS.

JOHN HUNTER, M.B., Toronto.

A SHORT time ago there appeared in the daily press a report of a Sunday school convention held at Brampton. Two items in that report should prove a splendid object lesson for medical men. These were: (1) "Five hundred young men went out by special train;" (2) "The meeting was one of the most enthusiastic and successful ever held in its special line." There is much in common between such a gathering and our medical meetings. Both are altruistic in their mission and both alike call their members aside from the routine duties of life, to

make some sacrifice of energy, time, and money on behalf of their associations. Why should one of these have a special train and so much enthusiasm, while the other can only "drum up" a very meagre attendance and all enthusiasm is lacking?

It is certainly "time for a change," and the only way to bring about a revival in our medical associations is to find out the predisposing causes that influence them unfavorably, and to remove these if possible. As these conditions are somewhat chronic, perhaps, we cannot discuss them better than under the old orthodox terms—etiology and treatment.

ETIOLOGY.

Ask the doctor on the street why he does not attend medical meetings more regularly, and almost invariably the answer will be, "Too busy; don't take any interest in them." In regard to being "too busy" there is probably no more subtle delusion that beguiles us than this one. No man is ever at his best when he is too busy, and, moreover, he is never doing his proper work if he can say this truly. A Shakespeare busy writing children's rhymes, or a Raphael busy painting sign-boards, would be the veriest of triflers. Walking along the streets of Glasgow, a surgeon, who has since reached great eminence, was handed a telegram, asking him to go out to a country town to see the son of a wealthy brewer. He turned to the writer and said, "I am not going," and gave the following reasons: "The attending physician is a competent man; there are no complications, and as there is nothing to learn from the case I object to losing the time." He went on to the hospital and spent the afternoon in research work. Temporarily he lost a large fee—he was a poor man at the time—and some repute, but in those hours he laid part of the foundation on which he subsequently built a world-wide reputation with its princely remunerations. A deceased member—one of the most eminent and successful practitioners this country has produced—said in presence of the writer, that it would have been better for him if he had slept half of the time he had spent in active work. The explanation was that then he could have done better work, and it would have been far more remunerative. Every one in general practice knows that a large percentage of his work is but a repetition of what every other doctor is doing, so that patients are no better served by him than by any other equally competent man. When the distances are great, local physicians could render much prompter service, with a greater economy of time, and therefore more profitably, even at less remuneration. How often do we find on coming home from these long trips that we have lost a far more instructive and remunerative case! It is said in reply to this, that certain patients prefer us to anyone else, and there-

fore we are in duty bound to go to them. Is there anything more whimsical than are most of the reasons given for calling in this or that doctor? Mrs. A. discharges her doctor because Mrs. B.'s youngster likes Dr. C.'s medicine. Mrs. A. sends for Dr. C. A physician may acquire, and hold—for a time at least—a large practice, by slavish subserviency to everybody's "beck and call," but the most instructive and remunerative practice is only acquired by gaining the confidence of one's colleagues. This can only be done by those who take plenty of time to study, to travel and to attend medical meetings.

In regard to the second excuse, viz., lack of interest in medical meetings. Do these men ever stop to think what debtors they are to the profession in which they are enrolled as members? Have not all the privileges and protection they enjoy, come through the self-sacrificing labor and concerted action of others? Before any man can lay claim to be either honest or honorable, must he not acknowledge his obligations, and be willing to do all in his power to meet them? Every doctor is deeply indebted to his profession, and therefore in honor bound to make some sacrifice of energy, time and money in its interests. The genius of the science and art of medicine is the prevention of disease and the procuring of safe and speedy relief from its effects. The imperative and legitimate demands of earning a livelihood, the care of a family, and provision for old age, do not constitute a prior claim on the doctor to the interests of the profession itself. Fortunately the more we seek to elevate our calling, the easier it becomes for us to meet all the other claims.

TREATMENT.

A very pernicious habit is becoming altogether too much in evidence at our meetings, viz., needless delay in commencing proceedings. This has both an aggravating and depressing effect on all those who gather at the appointed hour. If the officers would insist on opening promptly at the set time, it would have a most beneficial effect, both on the attendance and on the interest in the work. Enthusiasm quickly ebbs out when members wander about aimlessly for half an hour or so.

PAPERS.

While it is most desirable to have as many as possible contribute papers, it is impossible to have all of these read and discussed in the limited time allowed each section. Two solutions have been suggested: (1) Have abstracts of the papers distributed to all the members in the section and the discussion held on these. (2) A symposium, consisting of two or three short papers, and then full discussion. In either case the

full papers would be published in the journals. Under existing conditions, many papers prepared with great care cannot be presented for want of time.

SOCIAL FAITH.

The spirit we need to arouse us from our apathy in matters pertaining to the welfare of our calling is tersely expressed by the patriot Mazzini, who says, "The peoples lack faith, not that individual faith which creates martyrs, but that social faith which is the parent of victory, the faith that arouses the multitudes, faith in their own destiny, in their own mission and in the mission of their epoch." Few medical men are wanting in faith in their own ability. In fact, most of us are so completely engrossed in our work that we are quite willing to eschew social, religious and political obligations. But has not the medical profession become a great fraternity with mutual interests? Where is "that social faith which is the parent of victory?" We are no longer medical pioneers. Even in the most sparsely settled portions of our country the people are not restricted to the services of any one man. The obligations of pioneer life are past. The necessities of the sick are everywhere so amply provided for that nowadays any physician is fully justified in considering—nay, more, is in duty bound to consider—the wider interests of the profession, and to be prepared to make some sacrifice for its general weal. "We are segments of a fraternal circle. We are members of a professional body, united to each other, dependent upon each other, and with the pulse-beat of a common purpose thrilling through us all. The self must give way to the fraternal. Solidarity is the pass-word of progress. Self-seeking must change into social serving." If a great many of us were judged solely by the interest we take in the welfare of our profession, would we not be classed as "flies on the wheel" rather than as integral parts of a great fraternal circle?

"What we need to-day is a larger fraternal faith—faith in each other—faith in all the others." What it would mean for our profession if at our next meeting of the Ontario Medical Association in Hamilton, 800 or 1,000 enthusiastic medical men were to gather together for a common purpose, and if 2,500 or 3,000 were to meet in Ottawa at the Canadian Medical! What impressions such gatherings would make on the public! What faith they would inspire in regard to the importance of our work! The worth of any cause is judged by the enthusiasm it creates and the sacrifices men are willing to make for its advancement. The inspiring and beneficent influence of the former would be felt by medical men from Montreal to Windsor, and of the latter from Halifax to Victoria.

Two things more the medical profession of Canada needs very badly, viz., a broad outlook, and leadership—especially literary. An outlook: that will help to inspire us with a consciousness of the high mission of our calling—and for leadership, men with the power of a prophet to proclaim to us how great and glorious our destiny may be. Men who will say to every one of us,

“Fear not, but do the thing;
Keep thy head clear, hand strong.”

THE INTERNAL ALEXANDER OPERATION.—A WARNING.

By ERNEST A. HALL, M.D., C.M., F.R.M.S., Vancouver, B.C.

“The thing that I feared hath come upon me.”—*Job*.

IN the course of a discussion upon a paper read by Dr. Eagleson, of Seattle, upon uterine displacements, at the meeting of the British Columbia Medical Society, in New Westminster, one year ago, I pointed out with regard to the internal Alexander operation a possible post-operative danger, viz., that of the bowel being caught and its lumen obstructed by the over tense round ligament against the anterior abdominal wall.

This operation I described with diagram in last December's LANCET. I therefore presume that the reader is familiar with the procedure.

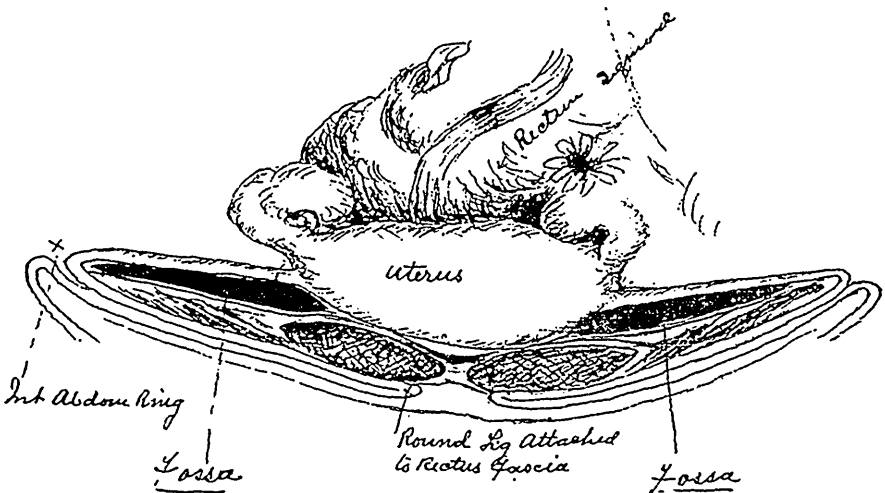
Where the loop of the round ligament is drawn through the internal inguinal ring and fastened within the sheath of the rectus, at or near the middle line, that part of the round ligament within the abdomen is brought, except in pendulous abdomens, in contact with the anterior abdominal wall, with the exception of its inner third, leaving a fossa from one to three inches deep with a narrow opening which passes into a mere slit towards the internal ring. This fossa is bounded in front by the anterior abdominal wall, behind by the anterior fold of the broad ligament and the round ligament above, internally by the side of the uterus, and more anteriorly by the bladder and below by lateral vesical false ligaments. This artificial fossa might very appropriately be called the internal Alexander fossa, and will well bear study by those interested in gynæcological work.

The particular feature which renders this newly formed fossa specially dangerous is the fact that when the patient with abdominal muscles thoroughly relaxed is being moved from the operating table to her bed, in lifting, the body is almost invariably bent concave anteriorly, thus relaxing the already relaxed anterior abdominal muscles, converting

what appeared upon the operating table as a mere slit into a large opening and facilitating the passing of intestine into this fossa. When the patient has been placed flat on her back, the anterior muscles tighten somewhat and are apt to compress any part of the bowel that might have passed into the fossa. With the passing of anæsthesia the muscles regain their tone and further add to the constriction of the neck of the fossa and of the bowel or omentum that may be contained within.

This condition will happen more frequently upon the right side on account of the lower mesenteric attachment upon the right side and the greater protection of the left fossa by the sigmoid flexure.

The internal Alexander operation had given me excellent results during the past year, but my cases have been of stout build and somewhat pendulous abdomens, the last case one of slight build and shallow abdomen being the only one that has given me cause for regret.



The uterus brought firmly against the anterior abdominal wall, showing fossæ between round ligaments and anterior abdominal wall.

Miss —, aged 28, nervous, semi-invalid for several years, extreme retroversion with adhesions. Internal Alexander operation with removal of appendix, general anæsthesia. The night following the operation the patient vomited more than usual, also complained of abdominal pain; slight bowel movement. Temperature and pulse began to climb, with increased abdominal distension. I reopened the abdomen, finding the small bowel deeply congested and mottled. A knuckle of ileum near the valve had prolapsed into the newly formed fossa, the lumen obstructed but bowel not strangulated. The bowel was opened and contents drained externally and closed. The result was temporarily satis-

factory, with cessation of pain and free bowel action. Within twelve hours conditions grew worse. I hastily opened the wound and inserted a glass drainage tube into the first coil of ileum that presented, letting out flatus and fluids. Death followed in a few hours.

Post-operative obstruction is perhaps the most formidable complication that confronts abdominal surgery. Sepsis anastomosis and mechanical procedures are fairly well within our control, but we yet have too frequently to meet defeat, and that often when we least expect it, through this condition. The possibility of bowel obstruction should be present in the mind of the operator at the termination of any intra-abdominal manipulation, and before the cavity is closed he should satisfy himself with regard to this matter as he does regarding hæmorrhage. The careful tucking of the omentum, whenever possible over and below the small intestines, and the placing of the sigmoid so as to guard the pelvis, especially when the relative positions of the viscera have been changed by a decided alteration of the position of the uterus, are well-known methods never to be overlooked. The position of the patient when returned to bed must also be considered.

In regard to the internal Alexander operation in patients with straight abdominal muscles and shallow abdomens, the ideal figure of the day, we must either bring the round ligament but half the distance into the abdominal muscles, in which case the uterus will not be brought sufficiently forwards, close the fossa by suturing the margins, or dispense with operation altogether. The latter I consider the best. In patients with over-hanging abdomens the fossæ are so shallow that constriction of the bowel is all but impossible.

A SIMPLE STAINING METHOD FOR THE GONOCOCCUS.

By J. G. FITZGERALD, M.D., and E. H. YOUNG, M.D., from the Laboratory of the Toronto Asylum.

PRELIMINARY NOTE.

THE method here suggested has been found very useful and because of its simplicity it must appeal to the busy practitioner; by whom so many laboratory procedures are difficult of performance and require the expenditure of no inconsiderable amount of time.

The gonococcus is stained by any aniline basic dye and is decolorized by Gram's method. These facts are taken advantage of by the advocate of the common method of staining where Bismarck brown is used to differentiate the gonococcus.

Our method is simply the application of Nissl's soapy methylene blue solution without any counterstain. The solution is made up as follows :

| | |
|--------------------------------|-------|
| Methylene blue B. patent | 3.75 |
| Venetian soap | 1.75 |
| Distilled water | 1000. |

The smears, which should be made on slides (and care must be taken to have them as thin as possible), are fixed in the air and then stained (without heating) for one minute with Nissl's, washed, blotted, and are ready for examination with the oil-immersion lens.

The objections to the method are that there is no counterstain and other pyogenic cocci may be mistaken for the gonococcus, we feel that if the smears are thin so that individual pus cells can be carefully studied this objection will lose weight; the other objection that any ordinary methylene blue solution would do as well we have not found to be the case.

For many years Nissl's stain has been a popular differential cell stain in the preparation of tissue of the central nervous system, and although it is unreliable at times for permanent preparations its value in the study of sections that are examined at once is of undoubted value, and we have found it is of equal value as a simple laboratory method for the study of gonococcus.

PATHOLOGICAL CONTRACTION OF THE UTERO-SACRAL LIGAMENTS—A SUGGESTION AS TO ITS ETIOLOGY AND TREATMENT.

Craig (*Amer. Jour. Obst.*, 1906, December), from personal observation, concludes that when the utero-sacral ligaments are found shortened, thickened and sensitive, they have in most cases become so as the result of an active contraction of their muscular fibres, set up for the purpose of defending an inflamed cervix by elevating and fixing it, and so diminishing its liability to traumatism or irritation. The cervical inflammation in question is an endotrachelitis, and the author quotes cases in which curettage has relieved the symptoms and brought about a softening and relaxation of the utero-sacral ligaments.—*British Gynæcological Jl.*, February, 1907.

PROVINCE OF QUEBEC NEWS.

Conducted by MALCOLM MACKAY, B.A., M.D., Windsor Mills, Quebec.

An influential delegation representing the Boards of Management of the St. Paul and Alexandra Hospitals for Contagious Diseases have laid before the Finance Committee of Montreal the pressing needs of each institution for money to carry on the work.

Mayor Ekers introduced the delegation and said that the city's grant of \$15,000 a year to each institution was not sufficient, and as a result they were unable to meet their indebtedness, and if they did not get speedy relief they would probably have to be closed. As the grants came out of the taxes, and as the hospitals had to be supported by the citizens, he thought it was only fair that the city should contribute a sufficient sum to assure an uninterrupted service. Not only must the actual number of patients treated be considered, but the number of cases of disease prevented in estimating the value of such institutions to a city like Montreal. The saving of time and money to the inhabitants, especially in time of epidemic, was incalculable. His Worship suggested that \$15,000 be added to the grant in each case.

Dr. Roddick, speaking on behalf of the Alexandra Hospital, said the Governors found it was absolutely impossible to continue work any longer without more money. In the Alexandra Hospital they had received 654 patients since its opening in July, 1906, and of that number only eighteen had died, or a percentage of 2.7, a remarkable record. The expenses were greater than had been anticipated, and at the present time they owed \$19,000 for supplies, and they had nothing in hand to meet the accounts. It was impossible for this to go on much longer, and as it had not cost the city anything to put up the building, and as it was the city's work that was being done, it was only right that the fund for maintenance should be adequate.

Mr. Crathern added a word, saying that when an increased grant for next year was spoken of it must not be forgotten that more money was needed for the current year.

Justice Loranger spoke on behalf of the St. Paul Hospital, which, he said, was so badly in need of funds that he was afraid that the Board of Management would have to ask the city to take over the institution and its indebtedness.

Ald. White, in reply, said that it had been proposed to give each hospital \$5,000 for the current year and increase the grant next year to

\$25,000 if the institutions would increase the number of beds at the disposal of the city from 20 to 25 a day. Under the present system the city paid \$1 a day per patient over and above the 20 allowed for under the grant, and it often happened that they were paying this extra money for patients in the Alexandra Hospital while there were empty beds in the St. Paul Hospital. It had been suggested that perhaps an arrangement might be made under which patients over and above the twenty in one hospital could be transferred to the other where there were not so many.

Dr. Roddick showed that this would not be practicable, and still maintained that \$15,000 additional per annum was not too much to ask.

Eventually it was agreed that the annual grant to both hospitals be increased by \$10,000 and that \$5,000 should be allowed to each for the present year. In return for this the contract was revised as follows: That the number of free beds at the disposal of the city in each hospital shall be increased from twenty to twenty-five. That the said hospitals agree to treat all patients without regard to religious denomination who may be sent to them by the city in such numbers as the said hospitals can accommodate, each accommodation, nevertheless, not to be less than one hundred patients a day. In case of epidemic the city reserves the right to the exclusive use of all the pavilions for the treatment of cases of one contagious disease only. The city reserves the right to exercise an absolute control from the point of view of hygiene. The said hospitals shall agree to carry out the ambulance service at their own expense. The said hospitals shall be obliged to treat all contagious and infectious diseases except smallpox, bubonic plague, and tuberculosis. The civic authorities shall be represented on the governing bodies of the hospitals.

Dr. J. E. Laberge, who has charge of the medical inspection of schools in Montreal, is about to recommend a change in the methods of the department. He thinks that Montreal could be subdivided into some thirteen districts and the three vaccination officers and ten other medical inspectors could be put in charge of the districts, to devote their whole time to the work at a salary of \$1,000 each. The total cost would be \$13,000 a year, or \$10,000 in addition to what is now paid to the vaccination officers. The present system has cost \$10,000 for the year, so that Dr. Laberge considers the plan very satisfactory financially, and as far as the work is concerned that it would be much more thorough, as directly a medical practitioner reports a case of infection has broken out the medical school inspector is at once advised of the fact and he stops the attendance of any children from the house in question, thus preventing its spread.

Dr. Laberge does not say where he is going to find medical inspectors who will "devote their whole time" to this work at a salary of \$1,000.

As an auxiliary to the system, the doctor suggests the appointment of district nurses who will attend the schools and give attention to children suffering from scabies, ringworm and other slight ailments, and then they go to the children's homes and if there is any advice wanted by the mothers they are willing and ready to give it.

At the Medico-Chirurgical Society the following papers were read: "A Machine for the Forcible Correction of Deformed Feet," Dr. J. A. Nutter; "Gonococcus Isolated from the Knee-joint," Dr. Lyman; "Case of Aneurism of the Femoral Artery with Suture of Opening," Dr. Elder; "Tabes Dorsalis and its Re-educative Treatment," Dr. C. K. Russel; "Living Case of Congenital Heart Disease," Dr. Howard; "Complete Infarction of the Renal Cortex," Dr. Osken Klotz; "Two Cases of Carcinoma Uteri," Dr. Gurd; "Ectopic Gestation—A Clinical Study," Dr. Chipman.

MODERN SURGERY OF THE FAUCIAL TONSIL.

At the recent meeting of the American L., R. and O. Society, Dr. Thomas J. Gallagher read a paper on this subject. He first discusses the anatomy of the tonsillar region and in speaking of the crypts he draws attention to the direction which the three channels take in the superior portion of the gland. Owing to their extending downward and outward drainage is materially interfered with, and extending as they do to the external surface of the capsule, it is quite necessary to remove all the superior part of the tonsil, in order to prevent peritonsillar abscess. The capsule is the fibrous membrane covering the external portion of the tonsil and is loosely attached to the superior constrictor. The arteries supplying the tonsil are the dorsalis linguæ from the lingual, the ascending palatine and tonsillar from the facial, the ascending pharyngeal from the external carotid, the descending palatine branch of the internal maxillary and a twig from the small meningeal. Normally the internal carotid artery lies behind and to the outer side of the tonsil nearly an inch distant from it in the posterior portion of the pharyngomaxillary interspace. Gallagher thinks the tonsillotome will soon pass out of use and the complete extirpation of the sinus tonsillaris will be the operation of election. He pleads for the complete removal of all tonsillar tissue if any at all be removed. In his operations Gallagher pulls the tonsil well towards the middle line and then with various knives he frees it from its attachments, when it is finally removed with a Coes snare. The tonsils are usually removed with capsule intact.

CURRENT MEDICAL LITERATURE

SURGERY.

Under the charge of H. A. BEATTY, M.B., M.R.C.S., Eng., Surgeon Toronto Western Hospital ;
 Consulting Surgeon Toronto Orthopedic Hospital ; and Chief Surgeon Ontario
 Division, Canadian Pacific Railway.

THE COMPARATIVE ADVANTAGES OF CATGUT AND SILVER- WIRE SUTURES FOR CLOSING THE FASCIA AFTER AB- DOMINAL INCISIONS.

In the *Cleveland Medical Journal*, July, 1907, appears an interesting paper by Hunter Robb on the above subject.

"The ideal suture material should be smooth, pliable but not brittle, not too costly, easy to obtain on short notice, and above all readily rendered completely sterile. Catgut would be an almost ideal material but when we sterilize it short of rendering it brittle (and consequently useless), some few of the inner strands may not be absolutely aseptic. And in fact, not a few cases of suppuration and even death have been directly traceable to the use of catgut ligatures. The cumol method probably gives the best results, but for the past few years I have had excellent results with the ordinary and chromicized catgut as prepared by Van Horn, of New York, especially when the smaller sizes were used.

"When, however, the larger sizes of chromicized catgut are employed the sutures are not always absorbed, but frequently gradually work their way to the surface of the wound and are then discharged. Moreover, as I have said, they are not always sterile. Bacteriologic tests made in my service have shown that the knots and ends of catgut sutures, even when the wound has healed by first intention, teem with bacteria, and I feel sure that chromicized catgut is responsible for many of the skin infections encountered. Again, in one case of phlebitis following an amputation of the cervix in which chromicized catgut was used I was inclined to attribute this complication to the suture material. And here a word as to what is meant by an 'infected wound.' I believe that our statistics in this matter are often unreliable, because the slight imperfections are often not mentioned. In my clinic a more or less persistent rise of temperature, no matter how slight, is regarded as *prima facie* evidence of wound infection and the case will generally turn out to be such. If the skin edges of the incision are slightly separated, even when macroscopically no secretion is present, we record these as instances of 'slight separation of the incision.'

"Personally I now prefer to use for the skin and peritoneum small sizes of sterilized catgut, but for the fascia I believe that silver-wire offers

advantages over the larger sizes of plain or chromicized catgut. Since March, 1907, we have been boiling the glass tubes that contain the catgut for five minutes before the operation. We feel that this has given us an additional security from sepsis. These results have been deduced from recent experience and largely also from an analysis of two series of 100 cases each in which silver-wire and chromicized catgut respectively were used in bringing together the deep fascia. This analysis shows that the relative incidence of infection in the deep fascia occurring after the use of catgut and silver-wire respectively was as three to one. Moreover, we noted that when suppuration did occur it was always larger in amount and extent in the catgut cases than in the infections met with after the use of silver-wire. The main objection against the use of silver-wire for closing the fascia is, that one leaves in the wound a substance that may annoy the patient by sticking into the surrounding tissues. This trouble, however, can be readily averted if the suture is properly applied and the ends are turned over with a pair of thin-jawed hæmostatic forceps, so that they form a ball-like end to the suture. As a matter of fact this annoyance had to be remedied in only four out of 400 of our silver-wire sutures. Removal under cocain is always easy and painless.

"So far as the occurrence of hernia is concerned, *a priori* this accident should be less likely to occur after the use of silver-wire, as this material undoubtedly approximates the tissues for a greater length of time and moreover, as has been said, in our experience has given rise to suppuration less often. As a matter of fact, hernia was not noted in a single case in either series, but I would hasten to say that separation of the fascia and muscle often does not take place within the first few weeks after operation, and yet sometimes if these patients are examined some months or a year afterwards a smaller or larger protrusion will sometimes be apparent. I have not infrequently noted such an occurrence in patients who have been operated upon by other men, and I have no doubt that others have met with the same thing in some of my cases. Consequently, so far as hernia is concerned, I do not believe that we can judge of the relative value of the suture material except in cases examined at an interval of six months or a year after operation."

SURGICAL AFTER-TREATMENT IN ABDOMINAL SURGERY.

Dr. B. C. Stevens, in a recent issue of the *Lancet*, gives a number of valuable hints as to the treatment of cases after operations, especially in abdominal surgery. After abdominal operations he advises to keep the patient lying flat on the back for two hours, and then prop up with a pillow under the head, and a thin one under the shoulders. The position

usually adopted, *i.e.*, flat on the back, is not necessary, and is often uncomfortable. It is especially contra-indicated in very thin people, in whom there is serious risk of bed sores. Moreover, this position is said to cause inflammation of the bladder in women. Children should not be strapped down in bed. The more bodily comfort and nervous and mental rest that can be secured, the shorter and more certain will be the convalescence. In every case where it is desirable to facilitate natural drainage, as in stomach and appendix cases, this can be secured by letting the patient lie on the right side, whilst to promote artificial drainage the semi-recumbent position on the back is best.

Thirst after an operation may be quenched by frequently rinsing the mouth with cold or hot water, or it may be forestalled by a large saline enema

When the vomiting due to the anæsthetic is over, a liberal quantity of fluid may be given by mouth, including weak tea, if the patient wishes for it.

Pain is chiefly due to spasm of the abdominal muscles, and can sometimes be relieved by propping up the shoulders and bending the knees over a pillow, thus relaxing the muscles. If this does not relieve the pain sulphonal or some similar drug may be given, but it is usual to avoid all forms of opium, because it masks the symptoms of intestine obstruction or peritonitis.

Diet for the first forty-eight hours is very important. In most cases rectal feeding is not required, though it is a useful adjunct, especially as it is easily carried out by means of nutrient enemata made of one ounce of panopepton in four ounces of water. Milk should be avoided both before and after an operation. It is often not digested, but forms a tough mass in the stomach, and leaves a bulky residue in the intestines, causing the breath and fæces to have a foul odor, due to lactic acid fermentation. Beef tea also is greatly over-estimated as a diet: the best only contains $3\frac{1}{2}$ per cent. of proteid, and a sick person would have to take ten pints in the day to secure proper nourishment. The best foods after an operation are: albumen water, *i.e.*, the white of an egg beaten to a froth, and a little fresh lemon juice, some sugar, and enough cold water added to make a tumblerful; Plasmon in hot water, broth, or in weak tea; or raisin tea. Ordinary fluid food may be given, also fruit and meat jellies, peptonized milk chocolate, etc. If rectal feeding has to be continued, the rectum should be washed out daily with about a pint of warm boracic lotion. Sometimes fluid diet causes a flatulence, and then semi-solid fluid should be given, *e.g.*, Benger's food, bread and milk, arrowroot, Allenbury's milk, etc.

The bowels should be opened on the third day in nearly all cases, preferably by a simple enema, preceded, if desirable, and especially in rectal cases, by an injection of olive oil. Sometimes a dose of calomel, 5 grains, is given on the second day. Enemata empty the lower bowel, but set up little if any of that peristaltic action in the intestines which is beneficial after appendix or abdominal uterine operations.

The time in bed is usually three weeks after an abdominal operation.

Strapping is useful after abdominal sections, and is usually applied over gauze and wadding, and over the strapping are placed more sterilized wool and a many-tailed bandage. In dressing the case afterwards, the strapping may be cut obliquely, and then fastened with safety pins. The extra support given by the strapping is of value in helping to secure primary and firm union. After the patient is allowed to sit up, a well-fitting belt, with pneumatic pad to fit the scar, should be worn for six months.—*The Medical Times*, July.

SERUM DIAGNOSIS OF SYPHILIS.

P. Fleischmann, Berlin, and W. J. Butler, Chicago (*Journal A. M. A.*, September 14), explain the principle and method of the serum diagnosis of syphilis, developed by Wassermann, describing in detail the technique and giving their own results with its employment. The method is based on the phenomenon of the fixation of complement first observed by Bordet and Gengou, and is somewhat complicated, but it demonstrates the existence of specific antibodies in probably all cases of active existing syphilitic infection, and the authors consider it of incontestable value as a diagnostic measure. In thirty-eight cases with a history of syphilis the reaction was positive in twenty-nine and inquiry revealed that the other nine patients were either under active treatment or had undergone such. In no case with active manifestations did the reaction fail, except in cases of tabes, in which disease it is possible that the symptoms may persist on account of irreparable injury after disappearance of the antibodies. The authors think that a positive reaction with this test may be considered a sure indication of syphilis, a point of especial importance in diseases in which the determination of their etiologic relations to syphilis is in question. The importance of the test as regards contagiousness, urgency of treatment, prognosis, etc., is not so definite, but they think they do not err in saying that the demonstration of antibodies is a tenable indication for treatment. On the other hand, one can but say at present how far we can use the disappearance of antibodies in judging a cure. During or after treatment, it is true, there is only a slight reaction or

none at all, but more experience is needed before the full significance of this fact can be estimated. More study of the subject, which they think has not received as yet due consideration, is needed, and the hope of stimulating other similar investigations has been their chief incentive in this publication.

GYNÆCOLOGY.

Under the charge of S. M. HAY, M.D., C.M., Gynecologist to the Toronto Western Hospital, and Consulting Surgeon Toronto Orthopedic Hospital.

ANTERIOR FIXATION OF THE UTERUS WHEN THE ABDOMEN IS OPEN.

In the *Journal A. M. A.*, May 4th, 1907. Dr. H. S. Crossen of St. Louis writes an interesting article on "The Piercable Method of Anterior Fixation of the Uterus when the Abdomen is Open." He has invented a special puncturing tenaculum forceps for use in his operation. He only takes into consideration those cases of retrodisplacement in which it is necessary to open the abdomen for some other reason. The following is his own description of the operation:—

"Of the various methods of utilizing the round ligaments after the abdomen is open, the one I have found most useful is practically the Gilliam-Ferguson operation. Instead of following the usual technique, however, I find that the work can be more conveniently and expeditiously executed by passing a puncturing tenaculum forceps through the wall, grasping the ligament directly and bringing it out along the forceps track. The exact technic preferred for the class of cases under consideration is shown in detail in the following steps:

"1. The special work for which the abdominal cavity was opened having been completed, the left round ligament is grasped by an ordinary tenaculum forceps about $1\frac{1}{2}$ inches from the uterus. The right ligament is caught in a similar manner with another forceps and then any retractors that are in the way are removed from the abdominal wall. The grasping of the ligament of each side with the tenaculum forceps facilitates the subsequent manipulation of the ligaments after the removal of the retractors which expose the pelvic cavity.

"2. The point of the puncturing tenaculum forceps is entered in the left side of the wound just beneath the upper sheath of the rectus muscle and about one inch from the pubic bone. It is passed outward just beneath the sheath for an inch and then the point is directed downward and made to puncture the rectus muscle and posterior sheath, but not the

peritoneum. The handle of the instrument is then raised so as to direct the point toward the round ligament and is made to grasp the ligament and peritoneum $1\frac{1}{2}$ inches from the uterus.

"In the class of cases under consideration, the ligament and peritoneum are usually so stretched and lax that they are easily drawn into the new canal as a small cord. If the ligament is unusually thick, or if the peritoneum is so thickened that it probably will not pass easily into the forceps canal, a window may be snipped in the peritoneum in front of the ligament and the ligament alone grasped and brought into the canal.

"3. The forceps is then withdrawn, bringing the ligament with it into the forceps track and out at the abdominal wound. The loop of ligament brought out is now caught and held by an ordinary tenaculum forceps, while the right ligament is brought out in a similar manner. After the ligaments are brought into position the tension is adjusted. It may be necessary to bring out a little more of the distal portion, the former to bring the fundus well forward and the latter to close effectively any space that may exist between the distal portion and the parietal peritoneum. By paying attention to this latter point the peritoneal puncture may be made a considerable distance from the internal inguinal ring without leaving any opening through which an intestinal coil might slip. If fearful on this point, the forceps may be carried to within half an inch of the ring or even practically to the ring before puncturing. The peritoneum being freely movable on account of the loose subperitoneal tissue, is drawn inward and puckered when the proximal of the ligament is drawn on to bring the uterus forward. This brings the peritoneal exit near the aponeurotic exit of the new ligament, near the outer margin of the rectus muscle. The direction of the new ligament, therefore, is forward, practically the same as in the Gilliam-Ferguson operation by the regular technique.

"4. The ligaments are then fastened in their new position. If long enough the loops are overlapped in the median line and fastened to each other and to the upper sheath of the rectus. If not long enough to reach to the median line, they are fastened securely in the forceps track by catgut sutures passed through the upper sheath and the ligaments beneath. The abdominal incision is then closed in the usual way.

"By the method thus detailed, the ligaments may be transplanted into the abdominal wall very quickly, giving a strong, reliable forward and upward traction to the uterus and adnexa and without any free bands or dangerous adventitious openings. The advantages of this particular technique in suitable cases over the usual technique of the Gilliam-Ferguson operation is that it simplifies and expedites the work by doing away

with the temporary ligation of the ligament and also with the lateral puckering suture.

"The puncturing tenaculum forceps here mentioned may be used with advantage in the regular Gilliam-Ferguson operation. It may be used also in those operations in which the puncture of the aponeurotic wall is made practically at the internal inguinal ring, though care must be exercised that the deep epigastric vessels be not injured.

"I designed this puncturing tenaculum forceps some time ago and after considerable experimenting have about what I want. I have been using it now for a year and have found it so convenient and satisfactory that I thought it worthy of presentation as a useful addition to our armamentarium."

SERUM AND LAPAROTOMY.

S. Fredericq (*Bull. de la Soc. Belge de Gyn. et d'Obst.*, Vol. XVII., No. 3) sums up a series of one hundred laparotomies preceded by preventive injections of antistreptococcic serum, with only one death, of hypostatic pneumonia in a person 82 years of age. Of these there were 35 cases of double ovariectomy, 30 ventrofixations, 10 fibromyomata, 9 ovarian cysts, 5 salpingoovariotomies, 4 extrauterine pregnancies, and 7 miscellaneous operations. The author proposes to carry through another series of 100 laparotomies without serum and then compare the results. —*Am. Jour. of Obs. and Diseases of Women and Children*, Apr., 1907.

THE UTILIZATION OF THE BROAD AND ROUND LIGAMENTS IN SUPRAVAGINAL HYSTERECTOMY.

Dorsett (*Amer. Jour. Obst.*, 1906, December) was led to use the broad and round ligaments as a finishing touch in hysterectomy, by the distressing symptoms complained of by a few patients after that operation. The symptoms were persistent pelvic pain, accompanied by a dragging sensation in the lower abdomen and back, together with distressing vesical irritation, and, in two cases, unsatisfactory sexual intercourse owing to considerable shortening of the vaginal tube. In the ordinary hysterectomy the loose flaps of the broad ligament left hanging in the pelvis in no way hold the stump in its normal position and, in the process of healing, a scar is left as long as the original cut surface of the broad ligaments. The remaining portion of the uterine body is robbed of agencies that should maintain it in its normal position. After the uterus has been removed the severed ends of the round ligaments are caught up by artery

forceps, drawn together and united by one or two stitches, and then sewed to the posterior portion of the remaining uterine neck. In case the tubes and ovaries are left the proximal end of the tube is carefully covered with peritoneum and then stitched into the side of the stump on either side. The last step of the operation is the coaptation of the anterior and posterior peritoneal layers. This procedure brings the neck of the uterus into relatively proper position, and also holds the bladder in a state of suspension, so that its fundus cannot descend and sacculate.—*British Gynæcological Jl.*, Feby., 1907.

NECROSIS OF A MYOMA AFTER LABOR.

Sippel, Frankfort (*Muenchener m. Wchns.*, 1906, No. 1), describes among five cases of hysterectomy recently performed simply on account of hæmorrhage, one of a woman in whom, after a natural labor, the placenta had been retained owing to a myoma projecting into the uterine cavity, and had to be removed by hand; there was no reaction in child-bed, but the first menstruation was very profuse and the loss of blood was dangerous to life in the second. Abdominal section was performed with a view to conservative proceedings if possible, but multiple myomata indicated a radical operation, and after a supravaginal hysterectomy, the myomata projecting into the cavity of the uterus was found to be necrotic. The myoma, no doubt, had been interstitial before pregnancy, and during the stretching out of the uterine wall had slipped inwards through the muscular tissue, and during the contractions of labor from lack of support on the internal side had been forced into the cavity of the uterus; the necrosis followed from deficient blood supply. In all five cases, though hæmorrhage alone indicated the operation, there was some other morbid condition causing that hæmorrhage.—*British Gyn. Jour.*, Feby., 1907.

OBSTETRICS AND DISEASES OF CHILDREN.

Under the charge of D. J. EVANS, M.D., C.M., Lecturer on Obstetrics, Medical Faculty,
McGill University, Montreal.

WEIGHT OF BREAST-FED INFANTS DURING THE FIRST TWO WEEKS OF LIFE.

Dr. J. P. Crozer, in *Archives of Pediatrics*, July, 1907, gives a summary of the reports of the initial weight of healthy, full term infants to which he has added his observation of 226 cases. His figures, combined with those of the other investigators quoted, show that a fair

average birth weight may be considered to be 7 lbs. and 8 oz. ; the males equal about 7 lbs. 10 oz. and the females 7 lbs. 6 oz., an average difference between the sexes of 4 oz. Infants weighing from 6 to 9 lbs. may probably be considered normal.

Certain influences affect the birth weight, such as the age of the mother, the number of pregnancies of the mother, the general diseases of the mother, etc. The author's figures confirm Duncan's statement that the heaviest infants are born of mothers between 25 and 29 years of age. The general conclusion is drawn from his own observations, and those of others, that a greater birth weight is to be expected in the children of multiparæ as compared with those of primaparæ. The difference ranges from 2 to 12 oz.

There is no reason to doubt that in general, the robustness and health of the mother may affect the initial weight of the child. Three most prominent conditions of the mother which will seriously affect the weight of the child are excessive vomiting of pregnancy, tuberculosis, and syphilis in an active state.

In studying the average loss and gain of weight during the first two weeks, the author has followed the plan suggested by Kezmarsky. The infants were weighed immediately after birth and again after they had been washed. They were then weighed every subsequent day at the hour of birth. The results gave the weights at ages which were multiples of 24 hours. In this series 165 infants were studied. These were divided into two classes. In class 1 there were 95 cases in which the mothers were healthy after having normal labor and puerperium; and the babies breast-fed by their own mothers were healthy throughout. In class 2 there were 70 cases. The birth and labor were normal, but some slight illness occurred in one, or the other, or in both, during the first few weeks post partum.

In general he concluded that in the majority of infants the minimum weight is reached by the third or fourth day, *i.e.*, that the gain in weight begins on the fourth or fifth day, and that the initial weight is regained by the tenth to the fourteenth day. The average loss varies from 3 to 12 oz. The majority of observers place it from 7 to 8 oz. or from 1-15 to 1-17 of the body weight.

With regard to the influence of sex, the statistics seemed to show that the boys lost less weight than the girls, and regained the original weight sooner. The author's figures, however, regarding the date of beginning gain are at variance with others, since in their case the girls commenced to gain sooner, or, in other words, the initial loss lasted a shorter time.

He notes that the heavier the full term baby the greater will be the initial loss. With regard to the influence of the number of pregnancies, his figures practically confirm those of Townsend. In general, in children of primiparæ the average loss is greater, the duration of the loss is longer, and the day of regain of weight is later than in those of multiparæ. The total gain during the first 14 days of life is greater in those of multiparæ. The author has endeavored to avoid the initial loss by having 61 infants wet-nursed regularly from birth.

His observations led him to conclude that, while the initial loss of weight in the new-born infant cannot be entirely prevented, it can be moderately lessened by the exhibition of the milk of another nursing woman until the mother's secretion has been established, yet that this offers no great advantage, and certainly the difference in the gain of weights does not justify the administration of any artificial food during the first days of life.

ECLAMPSIA OF THE MOTHER AS A CAUSE OF EARLY NEPHRITIS IN THE CHILD.

In reviewing the evidence that kidney lesions are somewhat frequent in children born of eclamptic women, Dr. C. G. Grulee, in *Archives of Pediatrics*, July, 1907, has collected a series of such cases from the more recent literature. He seems to agree with Gilmore, whose well-known views of the prenatal origin of kidney affections in children are included.

The history of a case coming under the author's notice is then recorded in detail. The mother was delivered by Cæsarean section after numerous convulsions, coming on towards the eighth month of her pregnancy. The child was small, but well formed, weighing 4 lbs. 2 oz. It died on the sixth day after a series of convulsions. The cord was found to be dry, not detached, but otherwise healthy. There were few macroscopic changes in the kidneys, but the microscope showed a high degree of degeneration of the parenchyma of the cells, the convoluted tubules being most affected. The urine contained a large amount of albumen and an occasional granular cast. There was some cerebral congestion and two small intercranial hæmorrhages were noted. The lesions present in this case all indicated the occurrence of toxæmia.

The author argues that the source of the toxæmia was undoubtedly the mother. He concludes that a certain proportion of children of eclamptic women come into the world with kidney functions markedly impaired; a certain number of these children survive the immediate post-natal period.

THE TREATMENT OF SOME COMMON TUBERCULOUS AFFECTIONS IN CHILDREN.

Dr. C. R. Keyser, in the *Brit. Jour. of Children's Diseases*, July, 1907, in his article states that a very common lesion of tuberculous nature is found in the subcutaneous tissue of children in the form of a small, firm, rounded mass which is freely movable. Later the skin becomes involved and the tuberculous mass softened, so that fluctuation can be obtained. These masses may occur anywhere in the body, but are most common on the limbs.

These tuberculous deposits may be found anywhere in the deep cellular tissue and are quite independent of any bone disease. In these cases there is not a drop of true pus, and the author considers that incision and drainage is the worst possible treatment which can be adopted. He says that in these cases there is no elevation of temperature until this deep-seated abscess has been opened.

The author suggests that incision and complete evacuation with careful removal of all caseous masses, and of the pyogenic membrane is indicated. If the cavity is large it should be flushed with plain boiled water, or normal saline solution, to wash away the scrapings. Iodoform may be dusted into the cavity, but it is doubtful if it has much effect in promoting cure.

The whole wound should then be accurately sutured, a large pad of wool applied, and pressure maintained by means of a strapping or bandage.

"In the majority of cases the wound heals by first intention and there is no subsequent re-accumulation of tuberculous material." If the latter should occur, the fluid can be removed by aspiration or a small incision which can be subsequently sutured. The author considers aspiration of these abscesses undesirable.

In the subcutaneous variety the whole mass should be dissected out if possible, if not, after careful scraping and removal of unhealthy skin, sutures should be inserted.

Caseating glands where situated superficially or deeply should be treated by excision and suturing.

Tuberculous dactulitis should be treated by means of a Scott's dressing, carefully applied, and re-applied as often as it gets loose. If these measures are not successful the bone should be laid freely open and scraped out with a sharp spoon. The cavity should then be filled with small pieces of dicalcified bone chips, the wound sutured and a splint applied outside of the bone. In most cases, the author states, the wound heals by first intention and there is very little subsequent deformity.

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EDITORIAL.

“RES MEDICA, RES PUBLICA.”

Such was the title of Dr. William Ewart's inaugural address at the opening of the session of the Medical School of St. George's Hospital, London. He began by stating that a man in ancient Greece with a knowledge of medicine equal to one of our youngest graduates would have been accounted a demigod; and there were 30,000 qualified practitioners in Great Britain. He referred to the great advances which the science of medicine had made, and that it now waited upon humanity with the most brilliant service, and yet was “‘Cinderella,’ the humble maid of all works.”

He pointed out that the profession of medicine is passing through a crisis, by which medical practitioners were threatened with two very important changes; the one was of an economic character, and the other affected the profession as a whole. The first change was affecting the income of the doctors, and the second was modifying the methods of practice by the increase of the number of specialists in almost every subject.

The rapid increase in the number of those following some special line was making heavy inroads on the income of the general practitioners. So much so is this the case that the income of the latter is estimated as varying from \$1,000 to \$1,250 per year. The best paying work goes to the specialists. This condition of affairs renders it almost impossible for the general practitioner to make any provision for old age. “Is this the wage of lifelong self-sacrifice and of the highest skill? The odium of so great a reproach has not been truly our own; but we should make it ours were we to fail to concentrate upon its cure the entire strength of our united body, and for that purpose alone, if for no other, we need a compact profession.” To these words all will assent.

Dr. Ewart gives, as causes for the changes that are taking place, the following: (1) The vulgarization of facts and fallacies of the profession by the press; (2) the growth of scientific education; (3) free thinking and liberty in medical matters; (4) the inquiry into specialism by so many; (5) the frequent resort to home treatment; (6) the constant change

of location of so many people by rapid transportation; (7) the effect of preventive medicine and more knowledge of sanitary laws; (8) and growth of more temperate habits of life.

He then went on to show what enormous contributions the medical profession had made to the State. The medical profession had done much for the spread of true education, and the preservation of the health of the people. Regardless of the fact that the advocacy of preventive measures in the matter of disease deals a severe blow at the income of doctors, they, nevertheless, considered the public good only, and preventive medicine is to-day in its present exalted position.

Among the remedies suggested are: (1) That the standard of both the preliminary and profession portions of the doctor's education should be raised. This might shut out a few bright men who could not afford the time or money, but the advantages would far exceed the losses; (2) the profession should ever keep before it the highest ideals and avoid those concessions that are altogether too common of doing valuable services to society and the State without a fee or any adequate reward; (3) there should be a concentration of effort to defend the rights of the profession, by resisting encroachments upon it, by refusing work at an improper fee, and by insisting on a higher standard of medical education.

There should be a determined effort made to raise wage-earning power of the members of the profession to such a level as would ensure reasonable comfort, a competency for age, and the best kind of work. The business of Public Health is the work of the State and should be paid. The attendance upon the poor should be paid for from the public treasury, and should not all be expected from the medical profession. This latter is a very important phase of the case. Doctors are now performing for the public services of very great value for which they receive nothing, not even thanks.

ADVANCE IN THE TREATMENT OF THE INSANE.

Some time ago, Drs. W. A. Willoughby, C. K. Clarke, and Edward Ryan went to Europe with the set purpose of studying the methods of treating the insane in the large asylums. These experts have returned and reported the results of their investigations, and it is with much pleasure that we find ourselves in accord with the tenor of the report. Indeed, we could go further and state that we have been urging for years the main grounds taken by these authorities.

The commissioners urge that the asylums for chronic cases should be enlarged and reduced in number as far as possible. The staff of

physicians and nurses should be enlarged, to permit of better work being done. Tuberculous cases should be isolated. The insane criminals should receive proper care and treatment. In dealing with the acute cases of insanity the commissioners think that the best results can be secured by having these cases treated in centres where there are teaching bodies, as the stimulus to research and investigation will lead to more thorough study than in places where there is no teaching or university work.

As the result of the investigation of the proper methods of treating the acute and early stage of insanity, the commissioners speak in very high terms of praise. They say that the number of patients cured or improved fully justify the additional expense incurred. We have long urged that it is poor economy to make our asylums merely prison houses. The indiscriminate mixing of the acute, chronic and criminal cases together is not a scientific plan, and, in the end, is bound to prove an expensive one. Cure as many cases as possible and send them back to some kind of useful employment. This is true economy, as well as true humanity.

The commissioners are to be congratulated on the outcome of their investigations. We hope the Government will give effect to the important features of the report.

HOSPITALS AND THE DIFFUSION OF KNOWLEDGE.

We are in accord with the remarks of Dr. Lunney before the St. John Medical Society, and the comments of the *Maritime Medical News* thereon.

The hospitals of the country have been increasing very rapidly in numbers and in efficiency. In all these institutions there is much valuable material for study, and should be used to further medical knowledge. Every hospital in Canada should have a regular clinic. This would be of the utmost interest to those who would be afforded an opportunity of studying cases, and would be of value to the attending physician or surgeon who gave a clinic upon his cases.

We have urged this plan in former issues, and revert to it again because of its great importance. Each hospital should be a centre of education and post-graduate work in its district. One hospital in Toronto, namely, the Toronto Western Hospital, has conducted weekly clinics for many years. To these clinics any physician or surgeon is welcome, whether on the staff or not. These clinics are well attended and their educational value has been very great. Recently, the Toronto Orthopedic Hospital has adopted a similar plan.

This means of diffusing knowledge should find a place in every hospital. It would go a long way towards fostering a lively interest in these institutions among the medical men of the localities where these hospitals exist.

Every hospital should have a laboratory in which specimens could be examined and a certain amount of research work done. This would be a great stimulus to the members of the staffs and the doctors in the neighborhoods of these hospitals.

Then, again, each hospital should aim for a working library. A moderate sum set aside each year would in time build up a large collection of books. It is almost impossible for any one man to have more than a limited number of books; but by a combination of interests there might be an excellent collection, with a reading room for all to resort to. We hope to see something of this in the future.

THE FACTORS OF INSANITY.

Dr. G. H. Savage, in his Bolingbroke Lecture, and which appeared in the *Lancet* of 26th October, discusses at great length and with admirable clearness the factors of insanity. He deals with the evolution of the nervous system on the one hand and with its dissolution on the other. He uses the simile of the nervous system being like an army where each grade of officer has his own duties to perform and is independent in the performance of these duties, but if any officer touches upon a higher duty he is restrained by the higher officer, but he in turn set free from such restraint by the higher officer. So to a large measure is it true of the various levels of nervous centres. He starts out by stating that there is no definite entity, or disease, which can be called insanity. He regards insanity as a disorder of mental balance which renders the person alien, or out of relationship with the surroundings into which he has been born. This makes insanity a personal affair, as the person is measured by his present and past conduct. The factors of insanity as laid down by Hughlings Jackson in relation to dissolution are: (1) According to the depth, that is, the degree, of the dissolution; (2) the nature of the person affected; (3) the rate of the dissolution; and (4) the different environment of the person involved.

He goes on to state that it is not everyone who can become insane. We are not all potential lunatics. Some become delirious very readily, while others do not, and there is a vast difference between the maniacal person and the passionate one, and also between the melancholic and one who is depressed from external conditions. Similar causes produce in-

sanity in one but fail to do so in another. The basis of insanity is an essential or acquired neurosis, and by neurosis is meant an abnormal tendency to react too readily to the surroundings. This neurotic condition may be inherited, or it may be acquired by causes leading to brain exhaustion.

The lecturer then goes on to state that insanity is not necessarily a case of disease. He regards the teaching that one must return to health to return to natural ways of mind is not always true. To put it another way, there are insanities due to faulty evolution, as well as to dissolution of a nervous organism previously normal. There is no definite entity which can be considered the cause of insanity, and there is no definite set of symptoms always associated with conduct which must be looked upon as mad. While every result must have a cause and every action must have its nervous equivalent, there may be many relationships between tissue and function, inconvenient and even inconsistent with the stability of social life, and that are not due to any generative process.

When we consider the effects of dissolution in the nervous system, it becomes apparent that when the highest functions are impaired or lost the lowest ones are freed from control. With slight loss of mental power there may be inability to decide; and if this advances it becomes the insanity of doubt. This lack of decision may go so far as to endanger life. Another event in dissolutional insanity is early impairment of memory, or, in acute cases, confusion of memory. Lack of control over one's actions is another feature. The person is liable to be easily imposed upon by suggestions from outside regardless of the consequences. He may not be able to control his own suggestions. This loss of control may be very slight and cause much difficulty in deciding the true nature of the case, and yet the person's domestic life is wrecked because of the loss of the power of adaptation. These are social misfits. When the higher control is lost what is left and normal may act, and the person may recognize that his acts are perverted and not be able to correct them.

This process of dissolution is usually slow. In senility the conditions are of slow formation, but the effects may be shown rather suddenly as the result of some stress. Thus, acute manifestations may be implanted upon a chronic condition. Toxic agents may act upon the nervous system so as to give rise to dissolutions that are acute or fairly so. The effects of alcohol, the toxins of disease, life in unhealthy climates, are well known as factors in the causation of acute dissolutions, when the subjective life becomes very active, but there is a lack of registering power, so that when the person recovers he may have no remembrance of all he said and did. In epilepsy there is an instance of complete dissolution down to loss of consciousness and muscular power.

In the case of loss of memory due to age, it is the recollection of recent events that suffers most. Events of many years ago are well remembered in most instances, and it is not uncommon for events to come back to memory that had been apparently forgotten. It would seem that in this way the memory for past events may become even exalted.

Dissolution of the mind is influenced by its evolution. Sex plays an important part; men often become egotistical, while women show an altruistic spirit. In youth dissolution soon shows itself in decay and dementia, while older persons are more resistant. Education plays an important rôle also. The ignorant person soon reaches his lowest levels, whereas the educated one may show many gradations from the first symptoms to those of complete loss of mental balance. In the dissolutions of age there is a return to the conditions found in the child. The imagination becomes active, and he talks to himself about things he thinks he has just done, etc. In this respect the dissolutions of the aged, of youth, and those due to toxins, have very kindred forms of hallucinations. In the aged there is often a concentration of past life, so that the person worries over all his losses, all his misdeeds, or sings his own praises over his fortunate ventures, as if they were all recent and cumulative. The typical termination for dissolution would be dementia.

In dementia præcox there is a feeble resisting power and their nervous system fails when exposed to the wear and tear of life. They are like the plant grown indoors that cannot withstand exposure. These cases are on the increase in neurotic families. There are forms of insanity with much disorder and little decay, and there are instances where the tendency is to grow wrong, rather than that of mere dissolution.

As the outcome of this perversion of development many become cranks, eccentrics, mental and moral freaks, and simple monomaniacs. These phases of mind may cause trouble only to their possessors, or they may cause trouble to society. They may pass into uncontrollable conditions, and become true insanities. A man may be perfectly rational and trustworthy in every way, but may believe that he is the son of the German Emperor. A physical defect may lead to mental distortion or wrongful evolution. Thus a boy with a squint may avoid company rather than have his companions jeer him. This may cause him to shun all society until he becomes a hopeless recluse. Anxiety may lead to suspicion and finally to profound jealousy. The gradual evolution of a depressing idea may drive one insane. A person may think he has some disease, and consults many persons about it. He finally becomes melancholic over it and finds his way to an asylum.

It is difficult to separate cases in which simple invasion takes place from those in which there is invasion with destruction, as in their earlier

stages they are alike. The cases of organized delusional insanity furnish instances of invasion with destruction. The delusion may be traced to some outside source. From suspicions, misgivings, the knowledge of some concealed vice, arise organized delusions of a sort to suit the conditions.

It is not for every one to become insane. The personal factor must be considered in the type of insanity. Dissolution explains many, but not all cases. The rapidity and depth of dissolution must be considered. The loss of higher faculties may allow lower ones to take on new developments and vary the cases accordingly.

There are morbid mental growths, as the simple, the invading, and the malignant or destructive. Thus there is much insanity due to brain disorder, but much also due to social misfitting.

A CANADIAN MEDICAL JOURNAL.

Our esteemed contemporary, the *Montreal Medical Journal*, in its issue of October, goes somewhat fully into the question of a journal for the Canadian Medical Association. The editor refers to the fact that the Association adopted at its recent meeting a new constitution that aims, among other things, at the publication of a journal.

The *Montreal Medical Journal* states that there are 6,000 physicians in Canada and 7 English and 3 French journals, or an average of 600 to each journal. Our contemporary thinks that 400 would be nearer the truth. This may be for some, but is certainly away below the mark for others.

Several solutions of the difficulty are offered. One of these is that "all the existing journals might merge their interests in one national publication." This might be feasible if the Canadian Medical Association had money to compensate these journals for actual investments, money sunk in the procurement of advertisements and circulation, and for much value in cuts, etc. In this way a merger might be possible; but it would hardly be reasonable to expect some of these journals with thousands of dollars invested to lay it at the feet of the proposed new national journal. Thus, a merger does seem somewhat improbable, if not quite impossible.

"Failing this, one or more of them, if not all, might unite and place their equipment at the disposal of the Association." For any journal to place its equipment at the disposal of the Association would mean that it gave up publication. It could hardly be expected to do this if it had anything to lose by the change. A journal that is practically dead, and with debts and not assets, might be anxious to place its equipment at the

disposal of the Association. Suppose two journals agreed to this plan, what would be the use of two equipments? Only a bother and a burden to the Association.

Another solution is offered in these words: "Finally, the Association might see its way to establishing an entirely new journal." This is, no doubt, the simplest way, provided some one could tell us where the money would come from. The *Montreal Medical Journal* complains that our present journals are local in character, going to only a limited number of subscribers. This would be equally true of the journal of the Association unless it had a wide circulation. But to send out two or three thousand journals monthly would call for a large outlay of money. But the subscribers are not on hand, while the printers' bills would have to be paid regularly. To obtain the subscribers would lead to very large disbursements. The new journal would have to pay for the procurement of advertisements. It is quite apparent it cannot be on the funds of the Association, as these are at present.

Dr. McPhedran, in his presidential address, suggested that some members might make a loan without interest to aid the scheme. These loans could never be repaid, so that it would be much better to ask for such aid as a clean gift. There might be a number who would be willing to take this view of the matter.

We have pointed out that the journal would be very limited, indeed, in its usefulness if it had not at least 1,500 of a bona fide circulation. The journal must be of high class, on good paper, well illustrated when required, ranging from 80 to 100 pages. Such a journal, with a circulation of 1,500, would cost about \$10,000 a year, unless people could be got to work for nothing, offices cost no rental, railways gave free transportation, and agents charged no commissions on advertising matter. We do not say one word against the Canadian Medical Association publishing a journal. All we counsel is caution, so as not to enter upon the undertaking and then find out that it cannot be carried through successfully.

With all that may be said to the contrary, the existing journals are serving the Canadian Medical Association well, and are publishing everything worth publishing in connection with the Association. We can only speak for ourselves, but we are prepared to state that we can give a full report of the proceedings of the Association if it so intimates its desire to have it done. We differ from our contemporary when it states: "The transactions of so important a body should be recorded, and there is at present no adequate means of doing so." We could, at a moment's notice, put into commission a service that would give the fullest publicity to every phase of the Association's work, and which would not prove too "laborious and costly an undertaking."

We do not agree with our contemporary that "there is not sufficient inducement for any of the existing journals to engage in so laborious and costly an undertaking." So far as we are concerned there does exist sufficient inducement, and that inducement consists in the fact that we aim to give our readers a thoroughly up-to-date journal in every way. We would feel that we did not live up to our ideals if we did not give to them the best features of the Canadian Medical Association.

PERSONAL AND NEWS ITEMS.

ONTARIO.

The officials of the Hamilton Asylum for the Insane have established a sanitarium for the patients afflicted with consumption.

Dr. J. D. Thorburn, of Toronto, has safely recovered from his attack of typhoid fever, and will soon be resuming his practice.

Dr. E. A. Ferguson, a graduate of Queen's, has gone to West Africa, where he has received an appointment.

Dr. G. C. Richardson, Hazeldean, has succeeded the late Sheriff, Dr. Sweetland, for Carleton County.

Dr. C. K. Clarke has been appointed Professor of Psychology in the University of Toronto.

Dr. Olmstead, of Hamilton, while on his way home on James street, on the night of October 26th, was attacked and sandbagged. He was confined to his house for a day or two.

The new Grafton Infirmiry, in connection with the Mountain Sanitarium, of Hamilton, was opened in the last week of October. There was a large attendance at the ceremony.

Mr. Reginald Phillips has taken over the business management of the *Western Canada Medical Journal*. Dr. Hughes, of Winnipeg, still remains the editor.

Among Ontario marriages may be noted Dr. F. J. O'Connor, of Gananoque, to Miss Keating; Dr. M. Branscombe, of Picton, to Miss Patterson; and Dr. E. Bolton, of Manotick, to Miss Truesdell.

Dr. Charles W. Hoare, of Walkerville, has been elected to the Medical Council for Division No. 1, succeeding Dr. May, who was appointed Registrar at the annual meeting.

Dr. A. Y. Massey, B.A., a graduate of Trinity, has been elected one of the original Fellows of the Society of Tropical Medicine, of London. He is now in Central Africa.

Dr. John W. Considine, St. Catharines, has passed his 90th birthday, and is still engaged in practice. He is a coroner, has lived in St. Catharines for 35 years, and is a graduate of Dublin.

The Woman's Hospital Aid Society of Brantford has collected four thousand dollars towards the erection of a Nurses' Home in connection with the John H. Stratford Hospital in that city. The society hopes to raise further sums.

Dr. Etherington, who was appointed to the chair of anatomy, entered upon his duties some time ago, and has contributed a very interesting article on the work of his department to the pages of *Queen's Quarterly*.

The practitioners of West Middlesex have formed a society with Dr. Hyttenranch, of Appin, as president; Dr. O. L. Berdan, of Strathroy, as vice-president; Dr. W. H. Woods, of Mount Brydges, as secretary-treasurer.

The Western Medical College, of London, have secured property on Ottawa street, close to the Victoria Hospital, the Isolation Hospital and the proposed Hygienic Institute. The new medical buildings will be modern in every detail and large enough to permit of much expansion in the College.

The Medical Association of St. Catharines and district have taken a firm stand on the matter of the fees for life insurance examinations. Last July the Association decided to charge a fee of \$5 for these examinations, and at a recent meeting reaffirmed the position already taken. Most of the insurance companies have agreed to pay the fee.

MARITIME PROVINCES.

Dr. C. D. Murray took a course of military instructions in Montreal.

Dr. K. A. McKenzie, of Halifax, was recently married to Dr. D. N. Morrison's daughter.

Dr. W. H. Hattie spent some time recently visiting institutions in Toronto and Montreal.

The present session of the Halifax Medical College is a particularly successful one. The attendance is larger than for many years past.

Major G. L. Foster, who took a course at Aldershot, England, has been appointed Principal Medical Officer for the Maritime Provinces, succeeding Dr. Drum.

WESTERN PROVINCES.

The new hospital in Calgary will cost about \$40,000. The plans have already been accepted.

Dr. West, who has been in command of the R.N.W.M.P. at Lesser Slave Lake for seven years, will probably be stationed at Prince Albert.

The Provincial Asylum for Alberta will be located at Ponoka. A very fine site has been secured.

The Roman Catholic hospital at Edmonton is being pushed on with every possible speed.

Dr. Thornton, of the Council of the College of Physicians and Surgeons of Manitoba, moved in the direction of trying to secure reciprocity between the Provinces and the University of Manitoba.

The trustees for the Manitoba Sanitarium for Consumptives have decided to locate it at Nenette. The building is to cost from \$40,000 to \$50,000. An effort will be made to secure subscriptions.

The census last year for Manitoba, Saskatchewan and Alberta is 800,000. In the two asylums for the insane there are 800 inmates, or 1 to every 1,000 of the population.

Dr. A. P. W. McKinnon has been appointed assistant surgeon to the Central Judicial District gaol of Manitoba in place of Dr. Gordon, who resigned.

In the Deaf and Dumb Institute of Manitoba last year, there were 97 in attendance. The Home for Incurables at Portage la Prairie has 160 patients.

The Medical Council of Alberta has raised the very important question of reciprocity between the Provinces of Manitoba, Saskatchewan, and Alberta. It is held that their interests are so common that they should be one in medical matters.

Dr. Ternan is urging that the Health Act of Alberta be enforced regarding the disposal of sewage. He contends that the frequent reports of the prevalency of typhoid fever is keeping people away from the Province.

The Winnipeg School Committee has made the proposal that the question of hygiene should be considered with the object of preventing the spread of contagious diseases. It was suggested the trained nurses be employed as inspectors.

The University question has attracted much attention for some time past in the Western Provinces. Some urged one well equipped university to serve for the three Provinces, while others thought each Province should have its own University. The latter view is prevailing. Manitoba has had a University in Winnipeg for many years, and at the late session of the Legislature for Saskatchewan an Act was passed making provisions for a University.

The requirements for candidates writing for registration in Alberta are: 1. Any candidate failing in three or more subjects must take the full examination again. 2. Any candidate failing in one or two subjects shall be given a supplementary examination on these subjects within three

months. 3. Any candidate rejected may appeal from the decision of the Council for a revision of his papers within thirty days after receiving notice from the Registrar of such decision. The appeal to be accompanied by marked cheque for \$25, which will be refunded if the appeal is successful, and retained if it is not.

BRITISH COLUMBIA.

Dr. and Mrs. Boyle, of Vancouver, have gone for an extended trip to Europe.

Dr. Frank Patterson, of Traill, and Dr. Seymour Traynor, of Steveston, have been appointed coroners for the Province of British Columbia.

Dr. Harvey Clare, who held the position of assistant in the Asylum in Toronto for some time, has gone to fill the position of assistant superintendent of the Asylum at New Westminster.

Dr. E. Genest, of the Mounted Police force in the Yukon, has resigned and has accepted a position on the staff of Laval University. He has travelled 4,000 miles since February.

At a meeting of the school trustees of British Columbia it was decided to ask the Government to arrange for the proper medical inspection of all schools.

Dr. W. T. Kergin, M.P.P. for Skeena, B.C., has gone to Eastern Canada and the States for a holiday. He will return in time for the opening of the Legislature.

A society has been formed in Vancouver, with Dr. Brydone-Jack as president, for the purpose of giving instructions on how to render first aid to the injured. The movement is intended mainly for those going to the lumber camps.

The Committee of Vancouver City Council recommend that houses along the line of sewers should make the connections with these within sixty days, and on approved plans. Restaurant kitchens have been inspected, and it has been suggested that milk dealers who sold impure milk would have their licenses cancelled.

FROM ABROAD.

Talking of doctors, a policeman, in giving evidence in a court in England recently, in a case of attempted suicide by poison, informed the court that "the doctor had administered an anecdote."

Sir John Reade, a surgeon-major in the British Army, died recently. He was born in Perth, Ontario, in 1832, and retired from the Army in 1892.

Sir Henry A. Pitman, consulting surgeon to St. George's Hospital, London, is now in his hundredth year. He is the oldest member of the profession in Britain.

The prevention of tuberculosis is the dominant note from almost every convention of medical and sanitary authorities all over the world. It was a chief topic of discussion at the recent International Congress on Hygiene, at Berlin.

The medical examination of school children is now in operation in Sydney, Australia, and with excellent effects. Much valuable information is being secured that will enable the authorities to improve the conditions of school life.

Australia is moving along in the right direction when it refuses the use of the mails to concerns whose business is not above suspicion. If an investigation shows that the object of the literature sent out is to defraud or deceive, it can not find passage through the mails.

The recent Medical Exhibition in Horticultural Hall, London, Eng., was a marked success. There were new drugs, instruments, and appliances on view that showed much progress in the healing art. One machine attracted a good deal of attention, namely, an x-ray apparatus by which skiagraphs can be taken in one and a half seconds.

The prevalency of the three forms of venereal disease have become so common among the natives of the Transvaal that the health of the community is seriously threatened. It is proposed that a hospital be established at Johannesburg with stations throughout the country for the treatment of these diseases.

Snails are now becoming a popular article of food in some countries of Europe. Austria, Bavaria and Switzerland have many large snail farms where the escargots are fed on vine leaves. There is now a large demand for snails in France, and snail farming is becoming a profitable industry. It requires about two years to fatten up snails for the market. They bring from \$2.50 to \$4 per thousand.

Dr. Ronald Ross, in a recent article in the *Lancet* (British), recommends that proper drainage is the only successful way of dealing with malaria. He urges that it is in certain bodies of surface water that the mosquitoes breed, and that these bodies only require to be drained off and not the whole malarial districts. In this way the disease can be brought into check and at a moderate cost.

The National Temperance League of Britain has appointed a committee to study the effects of alcohol upon mental and muscular efficiency. The committee consists of Sir Thomas Barlow, Sir Victor Horsley, Prof. William Curtin, Prof. Sims Woodhead, Drs. Claye Shaw, Robert Jones, Hyslop, Shuttleworth, Mr. Pearce Gould, Mr. Adam Eccles, and Surgeon-General Evatt.

The Royal Commission of Australia to enquire into the patent medicine trade, has reported. The Commissioner recommends among other

things: (1) that every patent medicine when issued for retail sale should be accompanied by the formula; (2) that no advertisement of any proprietary or secret cure should be permitted in any publication; and (3) that the transmission through the post of literature concerning such medicine should be prohibited.

The *Lancet* (British) in a recent issue, while discussing the subject of child labor, makes use of the following language: "How can we wonder at the miserable physique of many of our town dwellers when we find that children, directly they come home from school, are set down to some drudgery in the fœtid atmosphere of a crowded room, making paper boxes for sweets or crowns of flowers for candidates for confirmation, in order to help their mothers to earn the starvation wages by which they are barely kept alive? Often they return home to find not only no rest, but no bread."

Reports that are published from time to time go to show that there is much value in Bier's method of treating localized tuberculous sinuses. When the sinuses are on the extremities elastic bands are applied higher up than the sinuses. By this means a passive congestion is produced and maintained as long as may be desired. On the body the congestion is secured by applying a glass to which is attached a rubber. The latter is compressed and the glass applied. When the rubber is relaxed a vacuum results and the part under the glass becomes swollen and discolored.

Professor Lœffler and Dr. Rüss report from the Hygienic Institute of the University of Greifswald that they have been able to cure, in a comparatively short time, cases of the sleeping disease induced experimentally in animals, by the administration of arsenious acid. The drug may be given by the mouth, injected into the blood stream, or placed in the peritoneal cavity. It also produces immunity to the disease, so that it cannot be induced experimentally in an animal which has been treated for a time by the arsenious acid. The acid in a solution of 1 in 200,000 destroys the trypanosomes.

The Minister of Public Instruction for France has issued the following order: "Children attacked with smallpox, scarlet fever or diphtheria must not return within 40 days; their books and copy-books must be destroyed; and general disinfection must be carried out. In the case of smallpox all the teachers and pupils must be revaccinated, and in the case of scarlet fever the school must be temporarily closed if several children fall ill within a few days notwithstanding all precautions. Children with measles are excluded for 16 days, those with mumps for 10 days, and whooping-cough cases for three weeks. Tinea is excluded until cured."

OBITUARY.

EDWARD P. DOHERTY, M.D.

Dr. Doherty, who held the position of surgeon to the Maritime Penitentiary, Dorchester, N.B., died on 3rd October, 1907. He had been in poor health for several years. He was born in 1861 and studied at St. Joseph's College, and graduated in medicine from Buffalo in 1884. He began the practice of medicine at Moncton. From this place he removed to Meteghan, N.S., and later on to Fairville, N.B. In 1901 he was appointed surgeon to the penitentiary at Dorchester. He was possessed of many fine qualities of head and heart, and his death is deeply regretted.

E. H. COLEMAN, M.D.

Dr. Coleman, of Belleville, died of a paralytic stroke on 1st November, 1907, in his 75th year. He practised for many years in Belleville.

KENNETH M. MACKENZIE, M.D.

Dr. Mackenzie died in his 23rd year of diphtheria. He was educated in Toronto. He acted for some time as house doctor to the Ottawa Hospital, where he died. He was a native of St. Thomas.

R. S. B. O'BRIEN, M.D.

Dr. O'Brien, of Nanaimo, died recently. He was very well and favorably known in that part of British Columbia. He took an active part in politics and public questions.

J. W. MERRILL, B.A., M.D.

Dr. Merrill was a graduate of Queen's University in Arts and Medicine, the latter degree being obtained in 1902. He was born in Ottawa in 1877 and was thirty years of age when he died. He took a very prominent part in the games of Queen's University students during his undergraduate years. He held the position of assistant in Rockwood Asylum, and was a house surgeon for a year in Water Street Hospital, Ottawa. He then entered the service of the C.P.R. and was located at Chapleau. He was taken ill with cerebro-spinal meningitis, which proved fatal on 4th September, 1907.

GEORGE S. MCGHIE, M.D.

Dr. McGhie was a graduate of Queen's University. For over twenty years he was a leading practitioner of Leeds County. He died at Elgin of Bright's disease.

 BOOK REVIEWS.

PIERSOL'S HUMAN ANATOMY.

Including Structure and Development and Practical Considerations. By Thomas Dwight, M.D., LL.D., Parkman Professor of Anatomy in Harvard University; J. Playfair McMurrich, M.A., Ph.D., Professor of Anatomy in the University of Michigan; Carl A. Hamann, M.D., Professor of Anatomy in Western Reserve University; George A. Piersol, M.D., Sc.D., Professor of Anatomy in the University of Pennsylvania; and J. William White, M.D., Ph.D., LL.D., John Rhea Barton Professor of Surgery in the University of Pennsylvania. With seventeen hundred and thirty-four illustrations, of which fifteen hundred and twenty-two are original and largely from dissections by John C. Heisler, M.D., Professor of Anatomy in the Medico-Chirurgical College. Edited by George A. Piersol. Philadelphia and London: J. B. Lippincott Company.

If one could go the length of using the term perfection to anything that is the product of human brains, it might be applied here. The work is a large one, and one would expect that such would be the case. Anatomy has now become a wide field, and it takes much time and space to describe the many organs and parts of the human body.

The present work gives a very complete account of the minute anatomy of the various organs. This is followed by a most exhaustive account of the organ, or part, under consideration.

The fullest consideration is given to the exact position and relationship of one part to another. In this way the book is a most valuable one for both physician and surgeon. By a reference to its pages and excellent illustrations the most difficult points in anatomy, as this applies to diagnosis and operations, can be cleared up in a few minutes.

While this work is a splendid text book for the student's use during his academic course, it is also of the utmost value to the busy physician and surgeon who wish to keep up their knowledge of anatomy.

The publishers have produced a very attractive book from the book-maker's standpoint. The paper, type, binding, and illustrations would please the most hypercritical.

We take this opportunity of congratulating the editor, Dr. George A. Piersol, on the results of his labors. While we give unstinted praise to Dr. Piersol, we do not overlook the share of the work that has been contributed by his associates. The words that sum up the merits of this book are full, accurate, attractive.

HUMAN EMBRYOLOGY.

The Development of the Human Body; A Manual of Human Embryology. By J. Playfair McMurrich, A.M., Ph.D., Professor of Anatomy in the University of Toronto, formerly Professor of Anatomy in the University of Michigan. Third Edition, revised and enlarged, with two hundred and seventy-two illustrations. Philadelphia: P. Blakiston's Son & Company, 1012 Walnut Street, 1907. Price, \$3.

Prof. J. Playfair McMurrich has done good work on the subject of anatomy. The first part deals with General Development and the second part with Organogeny. In the first part the author discusses the various topics pertaining to the spermatozoon, the ovum, fertilization, formation of the germ layers, the external form of the human embryo, the medullary groove, notochord and mesodermic somites, and the yolk-stalk, belly-stalk and foetal membranes. The second part deals with the development of the various organs and system, as the kin, skeleton, muscles, blood vessels, digestive tract, nervous system, etc. The book is written in a very clear and pleasing style, and is fully illustrated. The publishers have done their part well. We can recommend this book as well calculated to meet the requirements of all who wish to gain a clear knowledge of the important subject of embryology.

 DYSPNŒA AND CYANOSIS.

Clinical Treatises on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. By Prof. Edmund von Neusser, M.D., Professor of the Second Medical Clinic, Vienna; Associate Editor Nothnagel's Practice of Medicine. Authorized English Translation, by Andrew MacFarlane, M.D., Professor of Medical Jurisprudence and Physical Diagnosis, Albany Medical College; Attending Physician to St. Peter's and Child's Hospital and Albany Hospital for Incurables. Part I., Dyspnœa and Cyanosis. New York: E. B. Treat & Company, 1907. Price, \$1.50.

The distinguished author of this small book has given to the medical profession a valuable addition to our literature upon this topic. He deals with dyspnœa and cyanosis arising from disorders of respiration, diseases of the respiratory tract, and disorders of circulation. Among the latter are named congenital cardiac defects, acquired cardiac lesions, vascular lesions, neuroses of the heart, disorders of the digestive tract, infectious diseases, dyspnœa from poisons, and from general diseases. The book is devoted to the subject of the interchanges of gases in the lungs. The subject matter of the book is ably handled by the author. The translator is to be congratulated upon the excellent English into which he has rendered the original text. We have not in a long while read a more interesting and instructive book.

HUMAN EMBRYOLOGY.

Outlines of Human Embryology; A Medical Student's Handbook of Embryology. By George Reese Satterlee, M.A., M.D., Instructor in Histology in the University and Bellevue Hospital Medical College, New York. First Edition. New York: John Wiley & Sons; London: Chapman & Hall, 1906.

The object of this little book of 173 pages is to furnish the medical student with a suitable working manual. It is interleaved with blank pages on which to make notes. The illustrations are numerous and well chosen, and the paper, typography and binding are good. The book deals with the subject of embryology in a clear and succinct manner, and is well calculated to aid the student to arrive at a thorough knowledge of a very difficult part of his medical studies. The male and female genital glands, the changes in the ovum, the development of the various organs and systems, all receive due attention. The study of embryology is regarded by many as an uninteresting subject; but such a book as this will do much to remove such an impression. The study of embryology as set forth in the pages of Dr. Satterlee's book is both pleasant and profitable. We can recommend this book to medical students with feelings of much confidence.

 DISEASES OF WOMEN.

The Diagnosis and Treatment of Diseases of Women. By Harry Sturgeon Crossen, M.D., Clinical Professor of Gynecology, Washington University; Gynecologist to Washington University Hospital and Chief of the Gynecological Clinic; Associate Gynecologist, St. Louis Mullanphy Hospital; Consulting Gynecologist to Bethesda Hospital, St. Louis Female Hospital and St. Louis City Hospital; formerly Superintendent of the St. Louis Female Hospital; Fellow of the American Association of Obstetricians and Gynecologists; Ex-President of St. Louis Obstetrical and Gynecological Society; Member American Medical Association, Missouri State Medical Association, St. Louis Medical Society, etc. With seven hundred illustrations. St. Louis: C. V. Mosby Medical Book and Publishing Co., 1907.

From a large experience and a thorough knowledge of the literature of the subject, the author has produced a good text-book on the Diagnosis and Treatment of Diseases of Women. All discussions on theoretical topics are avoided, and the limits laid down by the author of adhering to the practical subjects of Diagnosis and Treatment are closely adhered to. The whole field of gynecology is viewed from a very practical standpoint, and one that is bound to appeal to the general practitioner who is looking for a guide on this subject. The work is got up in a very handsome form. We bespeak for this work a large sale and many pleased readers.

A TEXT-BOOK OF PHYSIOLOGY.

By Isaac Ott, A.M., M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Second Revised Edition. Illustrated with 393 half-tone engravings, many in colors. Royal octavo, 815 pages. Bound in extra cloth. Price, \$3.50, net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pa.

The second edition of this excellent text-book on physiology has just appeared. It contains over 240 pages more than the first edition. The section on electro-physiology has been enlarged and much improved. The chapters on the sympathetic nervous system have been rewritten. Those on peristalsis have also been considerably extended. More than 250 additional figures have been added. Many changes have been made in the sections on reproduction and evolution. The work is one of the very best on physiology to-day on the market. It may be taken as bringing the subject up to date. The author merits much praise for the results of his labors. The book is got up in fine form.

A HANDBOOK ON CUTANEOUS THERAPEUTICS.

By W. A. Hardaway, A.M., M.D., Professor of Diseases of the Skin and Syphilis, and Joseph Grindon, Ph.B., M.D., Professor of Clinical Dermatology and Syphilis in Washington University, St. Louis, Mo. 12mo, 606 pages. Cloth, \$2.75, net. Lea Brothers & Co., Philadelphia and New York, 1907.

Skin diseases have often been considered the most obstinate and refractory of human affections, a condition largely due to former imperfect knowledge of their pathology and the consequent absence of guidance since obtained by following that natural path to the light. Modern research has been as productive here as elsewhere, and the therapeutics of dermatology is no longer among the opprobria of the profession. This is evidenced by the appearance of a separate volume devoted exclusively to the treatment of skin diseases. Coming as it does from the pens of such authorities as Professors Hardaway and Grindon, it will be accepted at once not only by specialists as the latest word, but also and more particularly by the profession at large, to whom the great majority of such patients apply for treatment.

SPECIFIC GRAVITY OF URINE.

The specific gravity of urine varies inversely with the temperature and it rises on an average one point with every fall of eight degrees F. in temperature. Urine which at 60 F. shows a specific gravity of 1020 will at 96 F. show one of only 1015.

MISCELLANEOUS.

EXAMINATIONS OF PHYSICIANS AND SURGEONS OF
ONTARIO.

The following is the result of the fall examinations of the College of Physicians and Surgeons of Ontario:—

The following have passed the primary examination, 1907: W. F. Adams, Toronto; H. H. Black, London; E. A. Howard, Hagersville; J. R. G. Murray, Toronto; W. C. Walsh, Millbrook; W. H. Dudley, Pembroke.

The following candidates have passed the intermediate examination, 1907: W. F. Adams, Toronto; John S. Anderson, Wooler; Annie Backus, Aylmer; W. Bethune, Ryckman's Corners; W. H. Dudley, Pembroke; M. R. Graham, Wallacetown; E. A. Howard, Hagersville; W. J. Johnston, Wareham; W. B. D. Kennedy, Pembroke; S. J. Keys, Kingston; J. D. Macdonald, Thamesville; M. A. Nickle, Madoc; G. R. Reid, Kingston; D. E. Robertson, Toronto; G. L. Sparks, St. Mary's; L. J. Simpson, Thornton; J. A. Whillans, Ilderton.

The following candidates have passed the final examination, 1907. W. F. Adams, Toronto; John S. Anderson, Wooler; Annie Backus, Aylmer; G. C. V. Consitt, Perth; V. G. Cartwright, Aldershot; George Cooper, Gravenhurst; W. H. Dudley, Pembroke; E. A. Howard, Hagersville; L. S. Holmes, London; Lillian Langstaff, Richmond Hill; J. D. Macdonald, Thamesville; William McKee, Barrie; W. H. Ochs, Hespeler; L. A. C. Panton, Kenora; A. M. Rolls, Toronto; R. H. Ruby, New Hamburg; G. R. Reid, Kingston.

THE CRAIN DOCTOR'S LEDGER.

This book is designed with the object of curtailing the physician's work, and compressing the facts and details in as small a form as possible. The size of the book is $8\frac{1}{2} \times 11$. Each sheet is devoted entirely to a family account, giving the date of call or office treatment, and ledger account, while the back of the sheet is ruled up so as to contain a complete family history. Then a follower is supplied so as to contain a history of the case and prescriptions given.

A petty sheet is supplied, divided into five parts, allowing ten accounts to each sheet, to be used for transient customers. A few petty sheets can be placed under each letter, which will not only save stock, but keeps the ledger from getting too bulky.

On the recapitulation sheet one column can be used for the amount of business booked, the second column for the amount of cash business, the third column for the amount of cash taken in on ledger accounts. At the end of the month by adding columns one and two you get the total amount of business done, and by adding columns two and three the total amount of cash received for the month.

Simlicity and accuracy together with facility in finding any individual account and the amount due are the advantages of this system.

Accounts of each patient or family are best kept on separate sheets. They can then be filed away alphabetically when the account is not active, in the transfer binder and there kept for reference, without making the current ledger binder unnecessarily cumbersome.

TORONTO GENERAL HOSPITAL EX-HOUSE STAFF ASSOCIATION.

The following members of the Ex-House Staff Association of the Toronto General Hospital assembled at the first of their clinics on October 24th, 1907: Doctors Parsons, Shuttleworth, W. P. Caven (President '07), G. W. Ross, Walter Wright, Samuel Johnston, J. F. W. Ross, Winnett, Caulfield, C. Temple, Trow, Hendry, Robinson, Nevitt, G. B. Smith, Stark, Rolph, H. B. Anderson, Campbell, Bruce, Honeywell, and the following members of the House Staff: Doctors Strathy, Lewis, MacMillan, Dickson, Burwell, Boddington, Rolph, Kinnear, Henderson, Graham and Fox.

Dr. W. P. Caven, the President, occupied the chair.

It was moved by Dr. J. F. W. Ross and seconded by Dr. H. B. Anderson, that the last Thursday in each month be the date on which the clinics should be held.

It was also resolved that members of the Association might be allowed to bring in guests and that these guests might be permitted to show cases.

Dr. Caven then presented a patient suffering from mitral disease associated with pulmonary tuberculosis. This case was discussed by Doctors G. W. Ross, H. B. Anderson, Robinson, and J. F. W. Ross.

Dr. Caven presented a second case. This patient was suffering from the classical symptoms of cerebral tumor. This was discussed by Doctors C. Temple, Campbell, H. B. Anderson, Robinson, G. W. Ross, Shuttleworth, Smith and Trow.

Dr. Strathy, senior house surgeon and assistant registrar, presented a patient, suffering from what had been diagnosed as obstruction of the

interior vena cava. This case was discussed by Doctors Nevitt, Parsons, Caven and Anderson.

Dr. J. A. Kinnear presented a patient suffering from chronic gout, reading the history of the case. It was discussed by Doctors Parsons, Nevitt, Caven and Robinson.

The chairman then introduced to the meeting Dr. Wm. Honeywell, who was on the staff in the year 1877-78. Dr. Honeywell gave a brief address, contrasting conditions as he found them now in the hospital, around which he had been a good deal during the past few weeks by reason of the illness of his wife, with the conditions as they were when he was a house surgeon.

MEDICAL PREPARATIONS, ETC.

CODEINE SAFETY AGAIN DEMONSTRATED.

Dr. E. L. McKee, of Cincinnati, Ohio, speaking of Codeine, in the *Denver Medical Times*, says: "This drug, according to Butler, is one-fourth as toxic and effective as morphine. It is less depressing and more stimulant, does not constipate, cause headache or nausea, and rarely leads to the formation of a habit. Codeine seems to exert a special, selective, sedative power over the pneumogastric nerve, hence its value in irritative laryngeal, pharyngeal and phthisical coughs with scanty secretion. Like morphine, it has proved of value in checking the progress of saccharine diabetes, and it has been used for long periods without the formation of the drug habit, inasmuch as when glycosuria was brought to a termination by dietary and other measures, the cessation of the use of codeine was not followed by any special distress. The effects of codeine on the alimentary canal are remarkable, in that it assuages pain as well or better than morphine, and nevertheless does not check the secretions or peristalsis notably, unless the latter is excessive, as in dysentery. The statement that codeine is simply a 'little morphine,' only differing from the latter in the size of the dose, is an erroneous view, as can be ascertained by any one who closely observes the action of the two drugs."

Codeine in connection with antikamnia has stood the test of exhaustive experimental work, both in the laboratory and in actual practice, and they are now accepted as the safest and surest of this class of remedies. Therefore, "antikamnia and codeine tablets" afford a very desirable mode of administering these two valuable drugs. The proportions, antikamnia $4\frac{3}{4}$ grs., codeine $\frac{1}{4}$ gr., are those most frequently indicated in the various neuroses of the larynx, as well as the coughs incident to lung trouble, bronchial affecti^ons, grippal conditions and summer colds.

THE MANAGEMENT OF CONVALESCENCE.

In convalescence from acute diseases, such as pneumonia, typhoid fever, acute articular rheumatism, etc., we are face to face with the problem of restoring the weakened organism to its normal condition. *The blood shows a state of secondary anæmia*, the nutrition is lowered, the nerve and muscular tone is below par; the appetite but sluggishly answers our urging, and the digestive powers feebly respond to the demands made upon them.

It is at the dawn of convalescence, when the danger of the illness itself has passed, when the desire to live, to get strong, is highest in the patient, that the physician's reputation often hangs in the balance. Having brought the patient through an illness, many physicians are unfortunately content to rest on their laurels, and to let long-suffering "Nature" do the rest. The wise practitioner, however, knows that Nature is grateful for the proper kind of aid in these circumstances,—aid in her efforts to lead a weak organism out of the bondage of illness.

And so, the far-seeing physician will look about in his armamentarium for a drug or a combination of drugs which will restore the blood, the nutrition, the digestion, the assimilation, the appetite, the weight, and the powers of resistance of the sufferer to normal, in the quickest possible time.

Fortunately, Nature has provided two chemical elements, iron and manganese, which are as necessary to the system as life itself, and which, when given in the proper amounts and in the proper forms, will carry the patient through convalescence to health. In the delicate state of the digestion of a convalescent it is of the utmost importance that the forms of iron and manganese administered be such as to become absorbed and assimilated with the least disturbance of the gastro-intestinal organs. The old-fashioned inorganic preparations of iron which still figure in the Pharmacopœias of various countries are totally unsuited for this purpose.

The scientific researches of Hamburger, Bunge, and others, conducted during the past twenty-five years, have shown the immeasurable superiority of the organic compounds of iron and manganese. The organic compounds alone have been found to be absorbable in such amounts as to produce the desired action on the blood. Of these compounds the peptonate, which is an organic-chemical combination of iron and manganese with peptone in a solution, known as Pepto-Mangan (Gude) is the most readily absorbed, and therefore the most efficient preparation of iron-manganese known, and as such is used with the greatest benefit in convalescent anæmias.

A point which is frequently lost sight of in considering the treatment of anæmia, is the importance of manganese as a constituent of normal

blood, and as an element ranking only next to iron in its power of building blood corpuscles and increasing the life-bearing hæmoglobin of these cells.

Campani, an Italian savant, as early as 1872, demonstrated that manganese is found in the red blood cells, as well as in the serum of normal blood, and the more recent researches of Lecanu and Lhéritier show that manganese forms a constant constituent of the hæmoglobin molecule. Furthermore, Zaleski (*Zeitschr. f. physiol. Chemie*, 1904, p. 449) showed that manganese enters the molecule of hæmoglobin with the same readiness as does iron, and therefore it has the same direct blood-forming power as iron. But, perhaps the most important fact in connection with manganese is that once having entered the red cell, it attracts iron to the coloring matter of the blood, as the recent investigations of Benedetti have shown (*Boll. Scienc. Mediche*, Bologna, June, 1905).

A consideration of the above facts will convince any unbiased physician that the preparation known as Pepto-Mangan (Gude) is made on scientific principles, in accordance with the researches conducted by the foremost physiologists and clinicians within the past quarter of a century. It contains a combination of iron and manganese calculated to secure the highest possible bloodbuilding efficiency without in the least interfering with the digestive functions. On the contrary, Pepto-Mangan is an excellent digestive tonic, it increases the appetite and promotes nutrition. Pepto-Mangan (Gude) therefore offers in convalescence the surest, most agreeable, and most prompt road to perfect health.

TYPHOID FEVER AND MODERN TREATMENT.

Good elimination should be maintained from every gland and emunctory, writes W. T. Marrs, of Peoria Heights, Ill. Every secretion should be aroused and made to do its best. Calomel in small doses is one of our best remedies. Salines are nearly always indicated. Abbott's saline laxative is pleasanter and better than crude salts. He has observed that if the bowels act not less than twice daily, the course and severity of the disease is modified. The old idea that in typhoid the bowels should be kept confined for a few days at a time, is now looked upon as having been an untenable theory. The more debris and toxins are eliminated, the less will the disease be compelled to oxidize by the process of fever. The more water the patient drinks the more are poisons eliminated or diluted, thus lessening their absorption. In case of hyperpyrexia, give a colonic flushing and the high temperature usually comes down a degree or two. The sulphocarbolates (W.-A. intestinal antiseptics) should be given to neutralize remaining foci of infection. Patients treated along this line seldom require the cold bath. Tepid spongings at frequent intervals usually serve a better purpose than the bath of low temperature.

—*Merck's Archives.*