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**Original Communications.**

ARTIFICIAL LIGHTING OF PUBLIC BUILDINGS  
AND PRIVATE HOUSES, AND ITS EFFECTS  
UPON THE HUMAN EYE.

*In three parts, with Illustrations.*

I. INTRODUCTORY.

By CASEY A. WOOD, M.D.,

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Several observers have drawn our attention to the damage that may be done to the eyes of both pupils and teachers by the injudicious lighting of schools, one writer at least holding the malposition of their windows to be the principal defect in all our public buildings. Still another believes that misdirected sunlight stands high in the list of causes that produce school myopia. There is undoubtedly a great deal of truth in all this. I am sure that if anyone whose eyes are not of the strongest will make a tour of the schools in our larger towns, and will devote a few hours daily to sitting, for say ten minutes at a time, at various points in the different study and recitation rooms, not forgetting the teachers' desks, he will readily detect any weak spots in the illumination of the buildings in question. Sometimes it is the teacher, sometimes it is his or her pupils that suffer, sometimes both are victims. Occasionally either direct or diffused sunlight is permitted to pour upon the upturned face of the student, but more often his eyes are handicapped in their efforts to see by reflections from distant window panes, or by annoying sidelights, or by being obliged to make out figures on polished blackboards that only mirrors in disguise; or the light is so variable that one hour the school-room is brightly lighted and the next it is shrouded in semi-darkness.

Certainly the problem of effectively lighting large buildings—especially school buildings—is one that may well tax the ingenuity

of the best architect. The principal rule now recognized for the illumination of schools by natural means is much the same as the one to be observed in lighting them artificially, viz. :—*the light should never shine directly or by reflection into the eyes of either pupil or teacher ; it should be fairly constant in character, and should fall equally upon all parts of the work in hand, whether it be a near object (like a book or a slate) or a distant object (as a blackboard or a map) with about the same intensity.*

When night comes on, or when, as often happens in the offices, stores and workshops of cities especially, it is necessary to resort to an artificial illuminant during the daytime, the problem becomes more complex. Some years ago I was asked to investigate this matter in the case of printers.\*

I have since found that the difficulties encountered in the attempt to properly illuminate newspaper and other printing offices and workrooms are much the same as those experienced by clerks in banks, bookkeepers, stenographers, workmen at the bench—in fact, by most of those who pursue a sedentary occupation of any kind. Indeed the same causes of complaint exist in many private houses. These troubles, strange to say, have been intensified by the introduction and almost universal employment of brighter, whiter and in some respects better lights. Among these are the various forms of the electric light,—the Welsbach and the Auer light. These admirable sources of illumination are, in my experience, powerful agents for evil when their employment is not hedged about by certain precautions.

Indeed, I feel sure that the ordinary electric lamp, as we usually find it arranged in private houses, is a common source of eye trouble. As to the arc light, particularly when it is unprotected by a ground glass globe, is a most fertile source of ocular irritation and disease when it is employed to illuminate warehouses, halls, hotel rotundas, ball rooms and other large apartments. Even the employment of the naked arc light in street illumination is trying to the eyes of the passer-by.

In dealing with this subject, it is wise to study the conditions under which both healthy and defective vision is accomplished. To attain this end it is not necessary that the reader should make an extended study of physiological optics, or that the writer should

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\*I am indebted to the publishers of *The Inland Printer* for the illustrations of those articles, and for permission to make use of my contributions to that Journal of September, October and November, 1892.

express himself in severely technical language. On the contrary, anyone of average intelligence can, by the aid of a few columns of reading matter and a small number of diagrams, obtain a practical knowledge of the method—for method it is—employed by the eye in seeing.

First of all, let us examine the normal eye, which from the optical standpoint may be regarded as an irregularly shaped globe whose long diameter is about an inch. An organ of this proper shape and size is called the *emmetropic eye*.

I have begun by giving prominence to the idea of size and shape in the eye, because, as we shall afterward see, it is almost invariably deviations from the normal shape and the normal size, or deviations from both of these, that produce most of the ills to which human eyes are subject.

The contour of the healthy eyeball is that of a watch glass set upon a regulation baseball; the watch glass is the *cornea* or external transparent portion of the globe, while the almost complete segment of the larger circle is covered by the *sclera* or tough white coat.

Immediately behind the cornea is the outer plane of the *iris*, that beautifully tinted velvet-like curtain whose contraction and expansion regulate the size of the *pupil*. A very curious thing about the iris, and a fact not generally known, is that differences in the color of the eyes depend not upon *variety* in the iritic pigment, but in the quantity and disposition of the coloring matter of the iris. That is to say, the only difference between deep blue eyes, hazel eyes, gray eyes and the various shades of brown eyes is that each possesses a different quantity of pigment from the others. This coloring material is in all eyes a sort of dull brown substance whose appearance of brilliancy is produced by seeing it through the cornea and a certain fluid (called the *aqueous*) lying between cornea and iris. In much the same way bright color impressions are obtained in a certain kind of glass paper weight. When, however, the glass is broken, the optical illusion disappears and the colored background is found to be dull and commonplace.

Immediately behind the iris curtain lies a remarkable structure—the crystalline lens—a veritable double convex “magnifying glass,” inclosed in a thin capsule and held in position by innumerable “guy ropes” by which it is attached to the sclerotic. These strong, thread-like fibres are joined to a small but powerful and very active muscle (called the ciliary muscle). Owing to the attach-

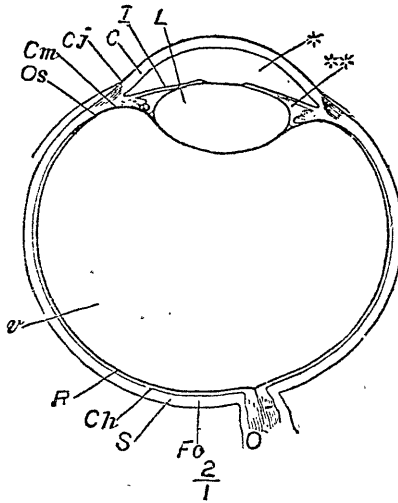


FIG. 1

SECTION OF EYE.—O, optic nerve; S, sclerotic or sclera; R, retina; v, vitreous; Cm, ciliary muscle; C, cornea; I, iris; L, lens; \*\*ciliary body; \*aqueous humor.

ment of these ciliary fibres both to the anterior capsule of the lens and to the tough sclerotic the front surface of the lens is kept rather flat. This constant action of these fibres should be remembered in connection with a most remarkable adjustment which the eye undergoes in seeing at various distances, to be shortly considered.

The principal space within the eye is filled by a transparent, jelly-like substance called the *vitreous*. This glass-like substance is

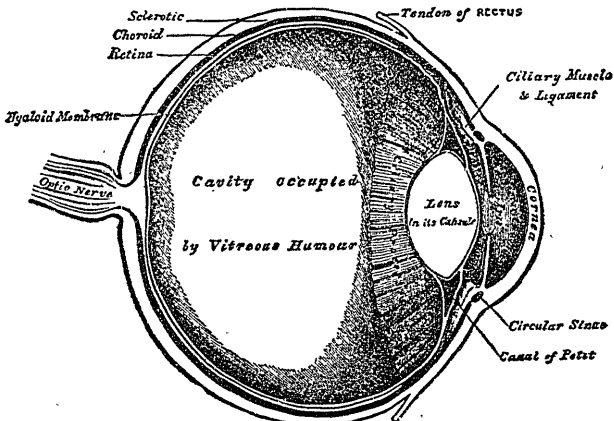


FIG. 2.

VERTICAL SECTION OF THE EYE.

in contact with the posterior surface of the lens in front. It touches,

behind, the *retina*—that complex expansion of the *optic nerve* which coats the inner part of the globe throughout two-thirds of its whole area, and acts as the sensitive plate of this optical camera. The nerve of vision, as seen in the diagram, carries impressions made upon it to the brain, and the individual interprets them as color, light, form, etc. We must not forget the *choroid*, which forms a dark, almost black, background to the retina. This coat is of especial importance in the eyes of printers, and those who habitually use their visual organs for near work of all kinds, as by means of it the superfluous light entering the eye is absorbed and prevented from rebounding against other parts of the retina, and so making a blurred picture upon the nervous “plate.”

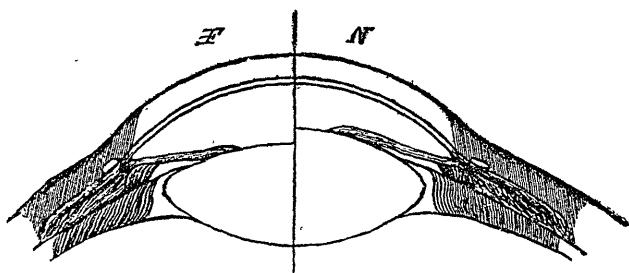


FIG. 3.

Showing how the eye adapts itself for vision at all distances; *N* shows the contracted ciliary muscle and more convex lens for near work; the left side (*F*) shows the lens adapted for distant vision.

In the case of the normal eye, rays of light from all objects more distant than a couple of yards are focused on the retinal background without much effect upon the part of or change within the organism; but if the object be brought much closer, a very decided alteration of the optical apparatus is necessary. This change must be made “in the twinkling of an eye,” and to understand how it is accomplished necessitates a brief reference to some of the first principles of optics.

*Convex lenses make parallel rays convergent, divergent rays less divergent, and convergent rays more convergent.*

*Concave lenses make parallel rays of light divergent, divergent rays more divergent, and convergent rays less convergent.*

Figure 4 shows the course of the parallel rays (*a, a, a, a*) of light from a distant object as they strike the cornea and enter the normal eye through the pupil. A ray of light coming from a rarer medium (air) into a denser one (cornea) is turned toward a perpendicular let fall at the point where it strikes the surface.

Hence we find that the hitherto parallel, or almost parallel, rays begin to approach one another. Further on, a still denser substance—the crystalline lens—is met with, and the rays are still further refracted, until finally they are accurately focused on the retina at *c*. But let us suppose the rays of light (*b, b, b, b,*) from a near object strike the eye. In such a case they would be distinctly *divergent* rays, and if left to themselves would not come to a focus

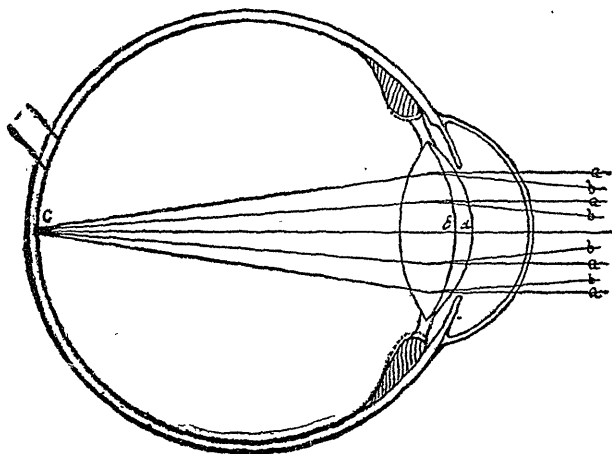


FIG. 4.

Showing how both divergent and parallel rays are focused on the retina by action of the ciliary muscle on the lens.

on the retina but *behind* it, and a blurred image of the object would be transmitted by the optic nerve to the brain. Or suppose the eyes, arranged for focusing upon the sensitive retina, divergent rays from near objects, to be suddenly turned upon distant objects. Manifestly these more parallel rays would come to a focus in *front* of the retina, and an equally blurred image would result. *This defect in the visual apparatus is remedied, as indeed most optical defects are remedied or attempts at a remedy are made, by a change in the shape of the crystalline lens.* This wonderful power of *accommodating* the eye to all distances resides mainly in the ciliary muscle. As before mentioned, the elastic lens is kept flat in front by the pulling upon it of certain "guy rope" fibres by which it is attached to the sclera. When it is necessary to look at a near object (or, what amounts to the same thing, make the lens *more convex* so as to render divergent rays properly convergent) the ciliary muscle *contracts*, pulls the parts about it forward, and the taut fibres loosen; the lens, left to itself, swells out, becomes more convex, and in an instant the work is done.

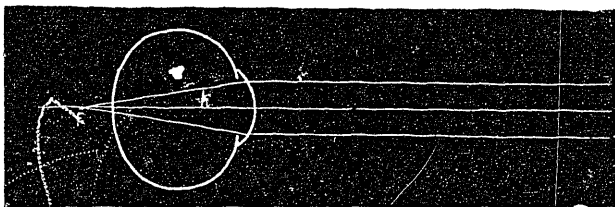


FIG. 5.

The small, hyperopic or long-sighted eye whose images come to a focus beyond the retina.

In this way the lens can adjust itself to almost any required degree of convexity, and consequently to any distance needed.

However, eyes are not all of that convenient size which permits of the ready focusing of images on the retina.

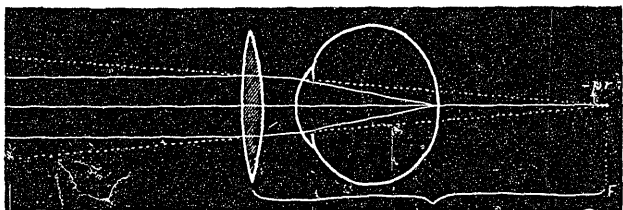


FIG. 6.

Showing how convex lenses bring rays of light to a focus on the retina of a long-sighted eye.

They may, for example, be *too small*, and in that case the ciliary muscle is constantly at work. An eye that is too short from before backward belongs to the class of long-sighted or hypermetropic eyes. For habitual distant vision, the ciliary muscle of a long-sighted eye adjusts itself pretty much as the driver of a cable car does his "grip" between stopping places, to hold the lens in proper shape. Young people do this easily, as their lenses are soft, and not only expand easily but are quickly and readily compressible; but as time goes on the crystalline

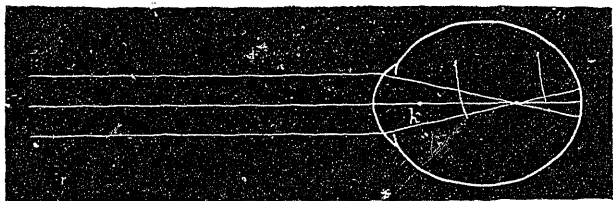


FIG. 7.

In the large or myopic eye, the focus "falls short" of the retina, as shown above.



grows, gets harder and less elastic, and the ciliary muscle has a greater struggle than ever, especially in hyperopic eyes, to make the refractory lens sufficiently convex for reading and other similar purposes. When the individual has reached the age of forty, or thereabouts, the lens has become so firm that it cannot be readily made more convex by relaxing the fibres that "hold it down" in front, and as time passes on, and the lens gets still harder, convergence of the rays (so as to make in reading a clear image on the retina) must be accomplished by the use of stronger and stronger convex glasses.

This is the reason why long-sighted persons are obliged to hold their books, papers, etc., farther away from them as they advance in years, and why so many decidedly *hyperopic* individuals who do much near work require glasses (convex glasses, recollect) for comfortable reading, writing, etc.

The converse is true of eyes that are too large, and consequently too long from cornea to retina. These belong to *myopic* or short-sighted people.

In spite of all efforts to relax itself sufficiently, the myopic image is focused by the ciliary muscle in front of the retina; then the rays cross and form a blurred image on the back of the eye. The only thing to do is to get close to the object so that the rays are more divergent, or to wear concave glasses which accomplish the same end.

Here the ciliary muscle has not much to do, and does that little within a narrow range; like Bre'r Fox, it mostly "lies low;" and as a matter of demonstration, the ciliary muscle of the long-sighted eye is developed to twice the size of that of the myopic eye, and is much larger than in the emmetropic eye. Indeed we find in this fact an example of a rule universal in the human organism: an organ constantly used develops in size and strength;

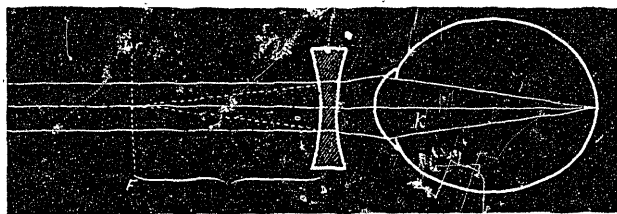


FIG. 8.

Showing how concave glasses act in focusing rays of light on the retina of a short-sighted eye.

a part whose function is rarely utilized dwindles away, and in time may even disappear.

The one advantage possessed by the moderately short-sighted man is that when he falls into the "sere and yellow" he is not obliged to wear glasses for reading. Such persons often pride themselves upon this, and never cease to talk about it. They even hand it down as a legacy to their children, and one hears echoes of it when he is informed that "grandma at seventy" never needed glasses when reading or sewing. The fact that the old lady could not differentiate between a cow and a horse at a hundred feet was left out of the story.

There is another form of optical defect, due to a malformation of the eye, called *astigmatism*. Not only should the eyeball be neither too long nor too short from before backward, but it should be of the normal *shape*. When it is not, when the watch glass of the cornea is wider from side to side than it is from above downward, or *vice versa*, the rays of light become mixed, as it were, and the blurred image also results. The unfortunate ciliary muscle still tries to neutralize this burdensome defect, pulls on a few "guy ropes" here, and lets out a few there, and does its best to focus the picture aright, and so long as the astigmatic person is young and in good health, often succeeds pretty well; but some day too much application to study, or too frequent reading by an improper light, or an acute illness furnishes the last straw that breaks the muscular back, and then headaches, eye-aches, blurred vision and a host of other symptoms may result. Properly fitting cylindrical glasses—plane in one part and convex or concave in another—must be used to correct such an error.

In the vast majority of cases infants are born hypermetropic, and as they grow older the eyeballs enlarge a little, so that they become emmetropic or retain a slight degree of the original hyperopia. If the enlargement of the ball, through overstudy, constant close work, etc., goes on, the individual becomes myopic, and the eye may be the subject of disease. Astigmatism is nearly always congenital.

That the human animal has two eyes must not be forgotten. Vision with both eyes together—*binocular* vision—is a much more important and useful thing than monocular sight, and to obtain it we must have not only two fairly good eyes, but they must be directed toward the object to be seen in much the same way. The image of this object must fall upon corresponding points of both

retinas. For this purpose the eyeballs are provided with six muscles: four straight, two oblique ones. By means of the latter the eyes are rotated—by the *superior oblique* inward and upward, by the *inferior oblique* outward and downward. The straight or recti muscles have a less complicated effect upon the eyeball.

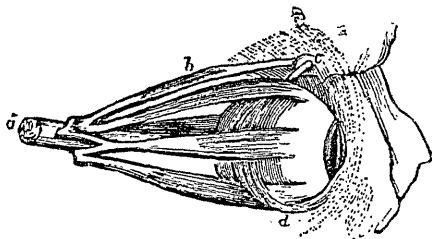


FIG. 9.

MUSCLES OF THE EYEBALL.—*a*, optic nerve; *b*, superior oblique muscle with its pulley, *c*; *d*, inferior oblique. The other four are the recti.

The superior recti draw the front of the eye up; the inferior oblique draw it down. Acting alone, each external rectus draws the eye out and each internal rectus draws it in toward the nose. Acting together, both recti cause the eyes to *converge*—as when looking at a near object—while the externi again direct the eyes toward the distance. It is evident that all these muscles should be in equilibrium; that none should be stronger than and tyrannize over the others. That, however, sometimes happens, and is not an uncommon trouble with persons suffering from “weak eyes.”

In conclusion, it is remarkable how few persons have their eyes placed in symmetrical sockets. Look at your opposite neighbors in a street car, and you will almost certainly see at least one whose left eye is placed higher or lower in his face than the right! This, of course, makes it difficult for images to be accurately focused on corresponding retinal points, and is often a source of ocular weakness.

(To be continued.)

## TUMORS OF THE ORBIT.

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By J. W. STIRLING, M. B. Edin., etc.  
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Tumors of the orbit are of comparatively rare occurrence, but yet the possibility of their turning up at any time in practice, as well as their obscureness, is sufficient and good reason for treating of this subject in regard to the salient points as to symptoms.

The first thing to decide is naturally the presence of the tumor ; next is its site, and, if possible, the place of origin ; and lastly its nature.

The tumor generally makes its presence known by displacing the eyeball, the direction of the displacement varying with the position of the tumor.

If it be inside the cone formed by the bellies of the muscles at the back of the eye, the eye will be projected directly forward, and there will be comparatively little loss of motion. In this position also it characteristically causes early blindness by pressure on the optic nerve setting up atrophy. At the same time, it is wonderful the degree of stretching the optic nerve can suffer without loss of function, if the stretching has not taken place too rapidly, and if no direct pressure be exerted on it. The irregular S shape of the optic nerve will partly account for this.

If the tumor be outside the muscle cone, the eye will be projected in a corresponding direction, as it is crowded to one or other side. The best way to judge of the projection in slight cases is to stand behind the patient and draw up both upper eyelids and compare the eyes. We have next to trust to palpation, and although this is a help in diagnosis, and a pretty sure one, too, if the tumor be in the anterior part of the orbit, yet when the tumor is located at all deeply, it is a very uncertain guide.

Even in the anterior segment of the orbit, one has to exert great caution and care ; for instance, a tumor springing from the anterior portion of the inner wall of the orbit may push the lachrymal bone forward and in front of it, so as to mask the tumor's true nature and real situation. Swanzy mentions a case like this of Mr. Kendall Franks, where a sarcoma from the éthmoid cells spread to the frontal sinus and orbit, yet its soft nature could not be made out, owing to its displacing the lachrymal bone forward in front of it, simulating an osteoma. The point of diagnosis would

be the perception by touch of the sharp posterior edge of the lachrymal bone.

Palpation here only guides us as to the presence of the tumor, not as to its nature, which is a far more difficult thing, and which I will mention later on.

Now, as to the other general symptoms to which tumors of the orbit give rise.

Chemosis is a marked one, it is of the non-inflammatory type, and is due to the mechanical impediment to the circulation offered by the presence of the tumor; in a slowly growing tumor it is frequently absent.

From the malposition of the eye, diplopia must exist, varying, of course, with the position of the eye, and producing of course the concomitant giddiness.

If the exophthalmos be severe, so that the lids cannot close over and protect the eyeball, the cornea suffers from the exposure, and ulceration of a severe type results.

The tumor may in the course of its growth exert pressure on the third nerve, when, as a result, paralytic dilatation of the pupil ensues.

Paralysis of motion of the eyeball varies, and may be due to the mechanical obstruction of the tumor, or to atrophy of the muscles or nerves from pressure.

Pain is a very varying symptom, and may be entirely absent, especially in benign growths.

Pulsation may be present in vascular growths, but it has also been observed in malignant growths.

So much then as to the main points indicating the presence of a tumor in the orbit, now as to its site and place of origin.

It may be mentioned, to start with, that tumors rarely invade the eyeball from the orbit, but the opposite condition is not uncommon.

Starting from the eyeball, a sarcoma invades the orbit, by fungating through the wall of the eyeball, in a case of my own, through the upper outer posterior quadrant. The ophthalmoscopic examination of the eye before operation made the diagnosis pretty certain.

The next most common site for a tumor of the orbit is the frontal sinus. The sinus becomes distended with mucus, and may even go on to abscess formation,—the swelling being greatest at the upper inner angle of the orbit, and is generally slightly

elastic. A great difficulty, however, sometimes arises in these cases where the mucocele extends to the ethmoidal sinus, and thence first spreads to the orbit. In the three cases I have come across I have not found this condition.

Another tumor occurring in this position to be diagnosed from the distended sinus is a meningocele ; this is situated rather further forward ; we also have the history of its duration, and occasionally the appearance of cerebral irritation symptoms on pressing it firmly.

This area is also the favorite seat of osteomata, which are generally ivory hard and of very slow growth ; these can occur elsewhere, especially on the roof of the orbit. The slow growth and ivory hardness guides, although occasionally a tumor of the frontal sinus driving the outer bony table down in front of it may simulate osteoma, as Swanzy points out.

In tumors growing from the inner wall and back of orbit, it is of importance to examine the palate, pharynx and teeth, as also the permeability of the nostril, since growths originating from the sphenoid and ethmoid frequently invade these cavities.

The misdirection of the eye assists us as to the position of these growths.

It is much rarer for growths to originate from the outer walls of the orbit.

Again, it is very rare for tumors of the brain to invade the orbit, the preceding cerebral symptoms would help as a guide, but by no means surely, for it may happen that a tumor of the orbit, giving rise to very slight if any localizing symptoms may early invade the brain.

Tumors of the antrum can secondarily invade the orbit through its floor ; here the symptoms would guide one.

Tumors of the lachrymal gland present no great difficulty, but there is a slow type of periostitis associated with much thickening, which may occur, especially on the roof of the orbit, and associated with syphilis.

Lastly, primary tumors of the optic nerve and of the cellular tissue of the orbit occur ; of these the characteristics will appear more fully in the ensuing portion of this article.

The last point we have then to consider is the nature of the new growths, and here great difficulties confront us.

Rapid growth, pain, early blindness, enlargement of præaural gland, invasion of surrounding cavities, and sometimes pulsation

point to malignancy. Complete immobility of the eye means general invasion of all structures, and indicates malignity.

In slowly growing tumors, which are generally benign, we have difficulty in diagnosing them from the periosteal thickening I have already mentioned, and also from chronic localized phlegmon.

If the tumor be *vascular* in nature, the exophthalmos can generally be reduced temporarily; excitement, crying, etc., can increase it; and, lastly, we may watch the effect of compression of the carotid on it. A pulsation and bruit can be observed in some of these tumors, but we must not forget these are also present in malignant tumors. Of the vascular tumors, I have only seen a congenital nævus, at the back of the eye, and it became partly visible on rotating the eye far outward. The most common tumor of the cellular tissue is sarcoma, and the diagnosis at best is conjectural. In an old note-book I find the following, copied from Berlin of Heidelberg: "If the tumor be solid, surface nodulated, does not fluctuate or pulsate, but is not stone hard, not connected with brain, nor proceeds from walls of orbit, eyeball, nerve, muscles or lachrymal gland or neighboring cavities, then it is almost certainly sarcoma of orbit."

Tumors of the optic nerve may or may not be malignant; here the blindness and atrophy of the disc as seen by the ophthalmoscope precede other symptoms; later we get the projection of the eye directly forward.

This exophthalmos directly forward we get with other diseases, such as Grave's disease, and paralytic proptosis, etc.; but in Grave's disease, etc., there is the lack of blindness, and the exophthalmos is generally bilateral.

Lastly, cysts of the orbit are not uncommon. Dermoid cysts being congenital, then there are hydatid and extravasation cysts. Encephalocele I have already referred to.

# Selected Articles.

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## SERUM THERAPY.

Professor Bouchard, in an inaugural address given to the Second French Congress of Medicine, held at Bordeaux on August 8th, gave an exceedingly interesting sketch of the treatment of specific diseases by means of bacteria or their products, claiming in passing that his experiments of May 30th, 1890, published in the *Comptes Rendus de l'Académie des Sciences* on October 26th of the following year, wherein he pointed out that a curative power rested in the serum rather than in the leucocytes of the blood, was the first published contribution on serum therapeutics, although Hankin in his paper on defensive proteids has practically the same idea.

Bouchard insists that when an infectious disease is treated by injection of the bactericidal serum of a vaccinated animal, we are not to apply the term bacterio-therapeutics; we are using an antiseptic substance in which, however, there is this peculiarity, that the antiseptic substance has been manufactured not by the chemist but by the vaccinated animal. He points out that we do not act upon the tissues, etc., of the sick person, but rather on the attacking microbe. In the course of infective diseases the serum of vaccinated animals acquires not a bactericidal power, which exists to a certain extent in serum of all animals, but distinct antitoxic properties, which properties have been conferred by the action of the cells of the vaccinated animal whose nutrition and secretion have been profoundly and more or less permanently modified by the temporary action upon them of vaccinal bacterial substances.

Having stated his own position as regards the history of the subject, Professor Bouchard points out that Behring and Kitasato in December, 1890, showed that antitoxic serum acts in doses so minute that we have an additional argument that it does not exert a bactericidal action. Antitoxic serum does not kill the microbes, nor does it interfere with their multiplication or even with their production of poison, nor is it yet proved that it can destroy or neutralize these poisons; rather it aids the tissue cells to resist the action of these poisons, many of which appear to act by paralyzing the ordinary defences against bacterial invasion.

The antitoxic action does not belong to a substance which is found in the blood nor to a particular chemical condition of the blood plasma. But the blood, or its plasma, or some of the constituent substances of this plasma may acquire the property of setting



into action the organic processes which naturally protect the economy against certain poisons. These normal protective processes, which may be impeded by certain poisons or exalted by the presence of certain substances in the blood, are of two kinds: (1) the destruction or chemical transformation of the toxic substances; (2) a stimulation at a distance of portions of the nervous system which the poisons tend to paralyze.

After reviewing the proteid products of metabolism, Bouchard points out that many of them possess powerful physiological action; they possess a certain degree of toxicity which is destroyed by heat; they are therefore of a proteid nature. The primary products of metabolism have been termed toxalbumins, and their unfavorable influence only has been studied, but their benign effects when acting in moderate quantities have been ignored. They differ in their physiological activity and in their effects, even those derived from the same cell, according to the variation in the functions and activities of such cell. By these products each cell influences its fellow, both as regards their nutrition and function, either temporarily or permanently, whilst beyond, and more important than this, the effect may be transferred to other animals, and even to different species. He goes so far as to say: "It is by the soluble products which the cells elaborate, much more than through the nervous system, that vital equilibrium among the cells is established." Such equilibrium is unstable. The opposition of antidote to poison, of antitoxin to toxin is constantly going on. The cells react against the poisons coming to them from other cells, whilst even the primary products of metabolism may have their molecules divided into two sets—hemialbumose or hemipeptone, and antialbumose or antipeptone; the products of the two sets may differ from the originals, but they have not different properties, although when acting on the organism they may have different or contrary effects.

Taking a pancreatic cell as an example, Bouchard points out that it secretes a ferment which passes out from the cell, and which certainly interferes with the process of coagulation. At the same time the cell manufactures a ferment which remains in the cell, but which, if set at liberty—by death or weakness of the cell—actually induces this same process of coagulation. It is, he argues, a matter of little importance whether the organism produces an antidote at the same time and place at which the poison is produced, but it is important that the presence of poison, naturally or artificially brought about, should be followed very closely by the formation of a counter poison or antidote.

The protective substance may be (1) a ferment which destroys the poisonous substance, for example, in the liver; (2) an internal secretion which may become more active in the formation of substances for the purpose of stimulating those tissues which are specially exposed to the attack of the poison, or which are specially necessary to the well-being of the organism.

The merit of Behring's great work lies in the fact that he has been able to prove that the serum of an animal exposed to the action of certain bacterial poisons acquires the property of neutralizing the effect of the action of these same poisons, although he is probably in error in assuming that the antitoxic substances are of bacterial origin ; they are really dependent on a permanent modification of the tissues of the animal in which the poisons are acting, in which case the theory of serum therapy exalts the functions by which we naturally defend ourselves against microbic invasion. The agent which prevents the paralysis of nutrition and function is manufactured by the tissues themselves as a kind of protective reaction against the action of the organized toxins or poisons.

Professor Bouchard's paper is instructive, not only for what it contains, but also for what it suggests as regards the building up of serum therapeutics on a rational basis.—*British Medical Journal*, Sept. 14, 1895.

At the sixth Italian Congress of Internal Medicine, Rome, a discussion on this subject was opened by Professor Foà, Director of the Anatomico-Pathological Institute of Turin. After referring to his own investigations and to those of others, he summarized the present condition of the subject. Hitherto the most certain and efficacious results have been from toxic infections ; the latest researches, however, show the possibility of obtaining effects quite as certain in septic infections. The concept that every infection reduces itself to a pure poisoning, and that every reaction consists in the production of the counter-poison, is, perhaps, too absolute. In the case of diphtheria, serum therapy has issued triumphant from the test of practice, and statistics show the sensible diminution of the mortality obtained by the new treatment. Serum therapy has been less efficacious in acute cases of tetanus. The tetanic manifestations in such cases would indicate grave organic lesions already complete, against which serum therapy cannot cope : it is, however, the best preventive remedy. In typhoid and cholera it has not found any application up to the present time, probably owing to the notable difference between experimental results and the natural condition of the infections in man. The latest researches of Foà have solved the problem of serotherapeutics in diplococcic infection of the rabbit ; it remains to study the problem in the larger animals, which permit of the results being applied to man. Serum therapy must not be allowed to hinder the development of prophylaxis. Both aim at the prevention of diseases, and serum therapy, where it shows itself in preventive immunization, becomes a prophylactic measure.

Professor Maragliano, Director of the Institute of Clinical Medicine, Genoa, referred to his researches on tuberculosis. He said he had clearly explained the materials used in the vaccinations, and summarized the new results obtained with his treatment by many Italian and foreign physicians. A total of two hundred and fifteen cases had been reported up to date, of most

diverse character, and all confirming the value of the treatment. He concluded his address with the following propositions : 1. Therapeutic serums, to develop their special action, require the active concurrence of the affected organism. 2. The value of serum therapy can be determined only by clinical observation. 3. Serum therapy can develop its special action as much in acute as in chronic infections. 4. The therapeutic serums introduced up to the present in practice in Europe are absolutely innocuous. 5. Serum therapy in its clinical application has up to now given indeterminate results in streptococcic and typhoid infections, doubtful in tetanus, promising in pneumonia, which awaits only a methodical clinical consecration ; positive in tuberculosis, which only wants the confirmation of an extensive trial ; incontestable and surely triumphant in diphtheria.

The only disappointment in connection with the Congress, which was the most successful yet held, was that Professor Maragliano did not explain his method of obtaining the anti-tuberculous serum, as many of the members had expected he would do.—*British Medical Journal*, November 2, 1895.

# Progress of Medical Science.

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## MEDICINE AND NEUROLOGY

IN CHARGE OF

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### GOITRE, EXOPHTHALMIC GOITRE, THE THYROID BODY AND EXTRACTS.

Recent investigations in regard to the pathology of Graves's disease point to the probability that the phenomena are not due to an undefined neurosis or disease in the medulla oblongata, but rather to some abnormal condition in the thyroid body. The following translation in the *British Medical Journal* is interesting in this connection :

#### THE THYROID BODY AND GRAVES'S DISEASE.

The question of the relation of Graves's disease to the thyroid body was discussed (*Sem. Méd.*, August 7th, 1895) before the French Congress of Alienists and Neurologists at Bordeaux. Brisaud reviewed the various theories of Graves's disease : (1) The oldest, that the heart affection is primary, and is caused through the sympathetic nervous system (Trousseau) ; (2) that the primary lesion is bulbar or central ; (3) that the thyroid gland causes the disease by secreting toxic substances ; (4) that the disease is only a concurrence of symptoms. The only constant symptom is tachycardia, for the goitre and exophthalmos may be absent, while the coexistence of Graves's disease and simple goitre in the same locality has never been shown to be more than a coincidence. The amount of hypertrophy of the gland is variable and not proportional to the severity of the symptoms, and it is quite contrary to facts to conclude from the anatomical changes that excessive thyroid activity is the cause of the disease, for the author found that of 25 adult thyroids, where no symptoms of Graves's disease were present during life, not one was healthy. The usual presence of goitre has gone against the bulbar theory ; but Filehne and Durduff produced exophthalmos, swelling of the thyroid, and tachycardia simultaneously by cutting the restiform bodies in young rabbits. If this is confirmed, one must agree that the thyroid function may be vitiated by morbid bulbar impulse, and that this perverted function may again produce symptoms. As regards the internal

thyroid secretion, all are agreed that it has an immediate action on the nervous system, and a secondary one on general nutrition. Notkine (*ibid.*, April 3rd, 1895) claims to have isolated from the thyroid body the substance (called by him thyroproteid) which causes myxœdema and its acute complications, the actual secretion of the gland being a ferment which converts the thyroproteid which is collected by, and stored up in, the gland into a useful substance (thyroidin). If Graves's disease is caused by over-activity of the gland, there would be, on this hypothesis, no more thyroproteid left, and the organism would be saturated with thyroidin (hyperthyroidation). Renaud (*ibid.*, August 7th), in 1888, had described a lesion which, among the variable ones of thyroiditis, is never wanting in Graves's disease, whether the gland is hypertrophied or not. This is an intralobular cirrhosis obliterating the lymphatics except quite at the margin of and between the lobules, by reason of which the thyroid secretion passes directly into the veins instead of partly into the lymphatics. This, with the presence of a peculiar type of fever, led him to suppose that the disease was caused by a morbid poison, which normally underwent destruction in the lymphatics. The latter view is supported by the fact that an extract of an adult gland is harmless when ingested, being absorbed in the chyle and passing through the lymphatics. In the foetal thyroid the follicles secrete a mucous substance (thyromucin), in the adult a colloid (thyrocolloidin). This latter is normally produced in all the follicles which are connected with the lymphatics, but in exophthalmic goitre it is only found at the margin of a lobule, the central follicles being poor in thyrocolloidin, or, if freshly formed, filled entirely with thyromucin. This closure of the lymphatics, which in the thyroid take the place of an excretory duct, causes a hypertrophic cirrhosis (*cf.* biliary cirrhosis) with new gland formation of a foetal type. Renaud concludes that the normal function at the periphery of the lobules being maintained is sufficient to prevent myxœdema by pouring thyrocolloidin into the blood. In the centre, however, only thyromucin is absorbed, and this he looks upon as the poison in Graves's disease. In their attempts to produce hyperthyroidation, Ballet and Enriquez injected extract of adult thyroid, that is, thyrocolloidin, and it remains to be seen whether Graves's disease could be brought about by injecting extract of foetal gland,—that is, thyromucin. Thus exophthalmic goitre is neither purely of bulbar nor of thyroid origin, the secretion of the gland being controlled by a centre in the medulla (*cf.* diabetes).

An exhaustive paper by E. Fletcher Ingalls, M.D., with the collaboration of Henry G. Ohls, M.D., of Chicago, on the treatment of Goitre, Exophthalmic Goitre by Thyroid Extracts and Desiccated Thyroids, appears in the *New York Medical Journal*, Sept. 7, 1895.

Thyroid extract, he states, was first recommended by G. R. Murray, in October, 1891, and the entire gland by F. Howitz in

March, 1892. Dr. Ingalls in his six cases of goitre, used Armour & Co's desiccated thyroids. The use of these animal products had its origin in the experiments of Ewald & Schiff in 1887, who removed the thyroid body from dogs, and found that death occurred after a period of hypnotic apathy, followed by tetanic contractions of muscles. Ewald found that a thyroid extract injected into a healthy dog hypodermically caused a similar but temporary condition of apathy.

The Reverdins of Geneva found that their removal in man is followed by myxœdema, and in children by arrest of development. Biondi thinks that the alveoli of the thyroid secrete a colloid material which passes into the lymphatic channels. Albertoni and Tizzoni state that the blood corpuscles acquire in the thyroid the power of fixing oxygen. Mobius contrasts Graves's disease with myxœdema, the former being due to excitation—hyperthyrea; the latter to arrest of the functions,—athyrea. Ord says that myxœdema, sporadic and endemic cretinism, cachexia strumipriva, and operative myxœdema of animals are due to annihilation of the function of the thyroid body, which is corroborated by the myxœdema committee appointed by the Clinical Society of London in 1887.

The use of the thyroid gland as a remedy was first applied in man by M. Lannelongue of Paris in 1890, Drs. G. Horsley in 1891, and J. W. Collins in 1892, who found that menorrhagia, headache and melancholia were relieved. G. R. Murray suggested the use of thyroid given hypodermically. Dr. H. W. G. Mackenzie in 1892 suggested the internal use of fresh glands two daily, later twice a week, and later at longer intervals.

The experience of some using this remedy in obesity, in Europe, is then recounted, 4 cases in 5 being benefited; and in 15 cases of Graves's disease it was reported to have been of benefit in 10. Dr. S. J. Meltzer of New York stated that the poisonous effects noted in some cases are due to over-doses, and suggests giving at first only what is equivalent to a grain of Park, Davis & Co's powder. 3 grs. three times daily is the best remedy in obesity. Dr. Ingalls then gives the history of six cases treated by himself, all of which showed improvement. The results obtained by some twenty physicians who reported to him are thus given.

*Summary.*—With my six cases treated by internal administration of the desiccated sheep's thyroids, and those reported to me by personal letter, I have, all told, fifty cases of goitre, not including one case of advanced exophthalmia, in which the patient died one month after treatment began. In these I find the following results: The swelling was reduced in thirty-eight cases; swelling not affected in eleven cases; no report in one case.

Of the cases where no improvement was noted, the remedy was used only five days in one and a week in another. In four cases the goitre had existed from six to twenty-five years, and perhaps was largely cystic, though not specified.

I have reports of seven cases of myxœdema, with the following results : Improved, five ; not affected, one ; unknown, one.

Of these, in one case the patient improved for seven weeks and then deteriorated, though treatment was continued for three months. Two cases of obesity without other disease are reported. One of the patients lost five pounds ; one gained five pounds.

The symptoms noticed after the administration of this remedy, observed in the various cases reported by me and reported by personal letter, have been : Headache in eighteen ; no unusual symptoms in eight ; no report, twenty-four ; dizziness in twenty ; no unusual symptoms in five ; no report in twenty-five ; trembling in fourteen ; no unusual symptoms in five ; no report in twenty-one ; rapid pulse in eleven ; no unusual symptoms in six ; no report in thirty-three ; weakness seventeen ; no unusual symptoms in ten ; no report in twenty-three ; backache in one ; nausea in seven ; no report in forty-three ; lost weight in twenty-five ; gained weight in two ; mind improved in two ; nervousness in one ; uterine contractions in one.

*Conclusions.*—From a consideration of the history of this subject and an analysis of the cases which we have presented, the following conclusions seem to us justifiable :

1. Thyroid products produce marked physiological effects upon the nervous and circulatory systems, as indicated by headache, dizziness, pains in other portions of the body, and great weakness, and by flushing of the face and rapidity of the heart's action.

2. Some of these unpleasant symptoms usually occur when a daily dose is reached corresponding to one and a half or two entire thyroid glands of the sheep.

3. If the administration of the remedy in doses that cause such symptoms is continued for a few days, constitutional effects are produced indicating that persistent use of doses of from six to twelve grains of the dried thyroid (equivalent to one or two thyroid glands) three times daily might produce fatal results.

4. Desiccated thyroid glands appear quite as active as the liquid extracts, and more stable.

5. Internal administration appears quite as effective as hypodermic medication.

6. For internal use, the adult dose of the desiccated thyroids should not exceed two grains three times daily at first, but the dose may be gradually increased to two or three times this quantity, provided it does not cause unpleasant symptoms. There is no evidence that moderate doses have an injurious effect.

7. The remedy in some cases has a pronounced effect on the body weight, but this is very uncertain, and varies so greatly in different persons, and in the same individual at different times, that there is strong reason for suspecting that the loss of weight which sometimes follows this administration may be due entirely to disturbance of the digestive organs.

8. In the treatment of myxœdema the remedy has undoubted value, and appears to benefit quite a large percentage. In these cases it is probable that the best results will be obtained by giving it at intervals for a long time.

9. In exophthalmic goître the remedy causes rapid reduction in the size of the gland, but it has no perceptible effect upon the exophthalmia, and it apparently aggravates the heart symptoms. In this disease it must be used guardedly, and its effects must be carefully watched.

10. In many cases of goître, internal administration of full doses of the products of the thyroid is followed by a most remarkable diminution in the size of the diseased gland. Improvement or cure may confidently be expected in seventy-six per cent. of the cases, but sufficient time has not yet elapsed to determine what the final results will be. It is probable that cystic growths in the thyroid gland would not be influenced by this remedy.

11. Clinical experience has not yet demonstrated that this remedy is of value in other diseases, but its effect in diminishing the size even of very firm and hard enlargement of the thyroid gland would certainly justify experimentation in other directions.

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## SURGERY.

IN CHARGE OF

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John A. Wyeth, M.D. (*New York Polyclinic*, November, 1895) records a case of dislocation of the shoulder complicated with fracture just above the deltoid insertion. The fracture was discovered while attempting reduction under æther anæsthesia. An attempt to effect reduction of the head by McBurney's method was made. An incision was made exposing the surgical neck, the bone was drilled, a hook inserted and extension made. The adhesions were found most rigid and unyielding. Reduction by this means could not be accomplished. The articular surface was excised and the arm put up in splints in the ordinary manner. The condition of the patient before the operation was bad, she took the anæsthetic badly, and died from shock twenty-one hours after the operation. From the extreme fixity of the head and the strength of the adhesions, he suggests that the dislocation must have occurred a year previous to the fracture and had been unrecognized.

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### CASTRATION FOR PROSTATIC HYPERTROPHY.

Kümmell (*Berliner Klinik*, August, 1895), in a lecture upon the operative treatment of enlarged prostate, reports eight cases of this affection treated by double castration. The operation was followed by considerable relief in these cases, but one patient, aged 77



years, died of exhaustion four weeks after the operation. In a review of his own cases, and those published by other surgeons, he states that in a large majority of instances of senile enlargement of the prostate, White's operation is followed by a more or less rapid shrinking of the prostatic tissue. This result in most cases enables the patient to dispense with the use of the catheter, and to discharge urine spontaneously. The bladder symptoms are much relieved, and the general condition greatly improved.

In the selection of suitable cases, attention should be paid to the condition of the muscular structure of the bladder.

If the detrusor muscle be paralyzed to such an extent that the bladder cannot be completely emptied, even by the use of a catheter, it would be useless to expect the restoration of the normal function as a result of removal of the obstruction to the flow of urine.

In two of the cases here recorded, good results were obtained in spite of the great weakness of the detrusor. In many cases the diminished size of the prostate after double castration permits of a more ready introduction of the catheter, and thus wards off the dangers of retention. According to the author, the operation is only to be recommended in those patients whose sufferings have attained a high degree, and can no longer be relieved by mere symptomatic treatment. The author met with no objection to the operation from any of his patients, all of whom were well satisfied with the results.

The author says the observations as to the influence of unilateral castration in the growth of the prostate are very contradictory, and further information is needed before any definite conclusion can be reached on this question.

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#### DIVISION OF THE VAS DEFERENS FOR PROSTATIC HYPERTROPHY.

Isnardi (*Centralblatt für Chirurgie*, No. 28, 1895) reports the case of an enlarged prostate, with serious and intractable urinary trouble, in a patient aged 71 years, which was successfully treated by double ligature and division of the vas on both sides. The incontinence ceased after the operation, the urine became quite clear, and the enlarged prostate diminished so much in size that it could scarcely be felt through the rectum. The epididymis became smaller and harder on each side after the operation, and the volume of each testicle was reduced by about one-half, the condition of these parts resembling that consequent on chronic gonorrhœal epididymitis.

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#### EMPHYEMA IN CHILDREN.

On the ground of an experience of 86 cases, Dr. Cantley (*Internat. Medic. Magazine*) concludes:

1. When pus is found to be present in the pleural cavity the proper treatment is to remove it.

2. The best method is simple incision and drainage.
3. The best site for the operation is the fifth space in the mid-axillary line.
4. Irrigation is unadvisable, and is indicated only in cases of fetid effusion.
5. Exploration and scraping of the cavity are not necessary.
6. Resection of rib is practically never necessary in children as a primary procedure to procure efficient drainage; but may be required to secure the closure of the sinus, subsequently, by allowing the chest wall to fall in.
7. Collapse of the chest wall is not a result to be desired in the early stages of the treatment.
8. Rapid and complete expansion of the lung is the great object of treatment.
9. The tube must be removed early.

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### INTESTINAL OBSTRUCTION FROM GALLSTONES.

Mr. Mayo Robson classifies these cases as follows: (1) The form dependent on local peritonitis in the region of the gall bladder leading to paralysis of the bowel. Two illustrative cases are related, both of which yielded to general treatment without operation. (2) Volvulus of the small intestine dependent either on the violence of the colic caused by an attack of cholelithiasis, or on the contortions induced by the passage of a large concretion through the small intestine. Two cases are related in which the author performed laparotomy and untwisted the volvulus, recovery following in each case. (3) Mechanical obstruction due to the passage of a large concretion through the small intestine. Two instances are given in which enterotomy, with removal of the concretion, was followed by recovery. (4) Obstruction depending on adhesions or on structure, the result of past gall-stone attacks or of healing fistulæ.—*Brit. Med. Jour.*

Dr. F. von Mangoldt, of Dresden, has brought out a method of skin grafting, which he calls "sowing epithelium." The epithelial elements "sown" are obtained by simply scraping a portion of healthy skin, preferably the inner or outer surface of the arm. The part is shaved and carefully disinfected, and with a well sharpened and sterilized razor, held perpendicularly to the surface, the skin is scraped so as to remove the epidermis down to the papillary layer. There is obtained a mixture of epithelial cells and blood in the form of a paste which is applied to the wound and spread over and pressed down with a spatula. In recent wounds any exudation of blood must be previously stopped, while old ones should be freed from granulations and rendered aseptic. The "seed" is bound down with some protective such as rubber sheets previously immersed in absolute alcohol, and dried: over this is put a simple aseptic dressing.

The epithelial scrapings adhere firmly and become covered with a covering of red blood. In a few days the wound seems covered with a pseudo membrane, loses its red color and changes to yellowish gray from coagulation of fibrin at the surface. From the 5th to 7th day the fibrin begins to disappear and the color changes to pink, being the first sign of the proliferation of the epidermal elements. About the middle or end of the third week, the skin is fully formed, smooth but thin; later it thickens and begins to desquamate. This desquamation, probably due to the absence of glands, should be combated with fatty or oily applications. From the 5th day it is well to gently irrigate the wound at each dressing, *i.e.*, every second day, with a luke-warm, sterilized,  $\frac{1}{2}$  per cent. solution of chloride of sodium. From the tenth day a borated lanoline ointment is used.

Dr. von Mangoldt has found it advisable in some cases to lightly scarify the part to be covered, that the grafts may closely adhere to the surface.

This method leaves, at the region from which the grafts were taken, but a superficial lesion, which heals rapidly and without any mark. It furnishes the wound with a smooth covering, which is not always obtained with the large grafts of Thiersch's method.

No skin will form over necrosed tissue; the epithelium applied will not adhere, but dies and is thrown off.—*Semaine Médicale*.

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## OBSTETRICS.

IN CHARGE OF

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### ANTISTREPTOCOCCIC SERUM IN PUERPERAL FEVER.

According to the *Revue de Chirurgie*, it seems very probable, from recent observations, that a serum has been prepared which is capable of arresting the numerous forms of infection caused by streptococci. About three years ago it was shown by Roger that cultures of streptococci contain two antagonistic substances, one of which diminishes whilst the other increases the resistance of inoculated animals. The former is destroyed by heat, so that with a culture raised by heat to a temperature of 230° F., animals can be vaccinated against streptococcic infection. The serum of animals thus treated acquires the property, not of destroying, but of attenuating the microbes that are introduced into them, and of checking the infection set up by virulent cultures. Serum taken from a mule which had been extensively injected with sterilized cultures was used on a woman suffering from puerperal fever. After unsuccessful injections of 8 and 16 c. cm., a third injection of

25 c. cm., on the third day was followed by rapid defervescence of the fever and rapid recovery. Another case is reported, where injections of the serum amounting to 40 c. cm. were followed on the third day by speedy defervescence and cure.

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*Abstract of a Paper on*

THE INDICATIONS FOR OPERATION IN PUERPERAL SEPSIS.

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The efficiency of aseptic methods in preventing infection during the puerperium has been demonstrated by the recorded results of Maternity Hospitals. Since operative surgery a few years since disclosed the various lesions of pelvic disease, it has been known that pregnancy and the puerperal state may be complicated by pre-existing inflammatory diseases of the uterine appendages tumors and septic accumulations inside the pelvis, chronic and circumscribed disease of this character may be converted into acute and diffuse inflammatory conditions by the trauma of labor. Puerperal sepsis may in this way be the result of pre-existing disease. This class of cases must necessarily be small since women thus diseased are generally sterile. That such cases necessarily come within the scope of operative treatment will be generally conceded. The author then considers the indications and guides for operative interference. For practical purposes he divides puerperal sepsis into two general divisions:

(1) Those cases wherein systemic infection is marked and prominent with comparatively insignificant local manifestations; and (2) those wherein the local inflammatory lesions are conspicuous and general systemic infection less marked and secondary. In the first division, by the time the diagnosis is made, the mischief is done, and nothing avails; in the second division, when the lesions are demonstrable to the skilled touch and local signs of known value, together with general symptoms of recognized significance are present, they form the basis of decisive action. The author closes his paper by deprecating empirical operations, such as hysterectomy, in the class of puerperal cases where the local symptoms are those of diffuse peritonitis without localization of lesions.

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INCOERCIBLE VOMITING OF PREGNANCY TREATED BY ELECTRICITY.

Gautier in the *Gazette des Hôpitaux* advocates the application of the continuous current, placing the positive pole over the pneumogastric, phrenic, and sympathetic nerves above the right clavi-

cle between the two insertions of the sterno-cleido-mastoid, and the negative pole over the umbilicus. The current is descending, of light intensity and long duration. A current of about ten milliamperes should be used for 15 to 30 minutes, care being taken to break the current gently.

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### REPAIR OF UTERINE INJURY IMMEDIATELY AFTER LABOR.

Dr. Dudley, in the *American Journal of Obstetrics*, sums up his experience as follows:—

(1) That suturing the lacerated cervix properly immediately after labor will result in primary union of the same, and prevent many of the evils that follow in the wake of a union by second intention; (2) that the fear of septicæmia attending the manipulation of the cervix and the introduction of poisons which will induce septicæmia at the same time is an unfounded one, and would be dissipated by giving such work a proper test; (3) that it is a method of procedure more justifiable than an immediate repair of the perineum which the profession of to-day universally advocates; (4) that the securing of primary restoration of the laceration hastens involution, prevents subinvolution and the various forms of displacement which are induced by it in such an overweighted organ; (5) that catgut is the proper suture, and perfectly safe and reliable when properly prepared.

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### TURPENTINE IN POST PARTUM HEMORRHAGE.

Dr. N. Mayne, in *Trained Nurse*, says: "For some years I have used spirits of turpentine in post-partum hemorrhage, and in every case with the best results. When the ordinary means, *i.e.*, friction over the uterus, irritation of the uterus by introduction of the fingers, cold, hypodermic injection of ergotin, etc., failed, by saturating a piece of lint with the turpentine, and introducing it in my hand into the uterus, and holding it against the walls, rapid contraction took place, and all hemorrhage instantly ceased. In one or two cases when the patient was almost pulseless, it seemed to act as a stimulant. On no occasion did this action fail or did it cause the slightest inconvenience, except in one, when the side of the patient's thigh was slightly blistered by some that came in contact with it; but it gave very little annoyance. I consider it is much quicker and surer in its action than any other remedy, and does not cause any injurious result, and is much more easily applied. In country practice, getting hot water, or using injections, often means loss of time."

# PATHOLOGY.

IN CHARGE OF

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Every year is making it clearer that pathology is governed by laws the same as those which exist in every department of nature, and that it must take its place upon an equal footing with the other sciences. All proper progress in medicine is based upon the results of a study of the causes of disease, and this is necessary before the value of any remedy can be properly estimated. The recommendation of antitoxin in the treatment of diphtheria is a case in point. The great work of the pathologist in diphtheria was not the demonstration of the Klebs-Lœffler bacillus, but the fact that the ultimate diagnostic test is the presence of nerve degeneration. There are other membranous diseases of the throat, and this bacillus is found in presumably healthy children, but in no other throat disease than diphtheria is this change produced. It is the poison and not the bacillus the antitoxines are meant to counteract. This matter was first brought into prominent notice at the International Congress of Hygiene at Budapesth in September, 1894, by Behring and Roux. It is purely a question of immunity, Metchnikoff and his earnest co-workers holding that both natural and acquired immunity are due to the capacity of cells especially of leucocytes to digest and neutralize infective agents, and so preventing infection by hindering their multiplication and growth in the body. Buchner and his followers on the other hand would deny to the cells any such comprehensive action, yet the result is that acquired immunity at any rate is bound up with the presence in the blood and tissues of chemical substances which do possess a natural antipathy to the infective agent. The further researches of Behring and Kitsato have proved this abundantly, and, lastly, they have shown that the immunizing power of certain agents may be exercised after infection has taken place, and that they have a therapeutic value. The central pathological fact for the year then is the results obtained from the antitoxic serums. The use of the antitoxine for the remedy and prevention of diphtheria has overshadowed all the others. Laboratory and hospital experiments are notoriously fallible, and it is not until remedies have gained a widespread use in the hands of the average practitioner that their real value can be ascertained. This remedy is now receiving such a test. Up to this time the results, while they show no conflict, are variable, and it is impossible as yet to gauge accurately the value of the remedy. Many factors have to be considered,—the accuracy of diagnosis, the gravity of the disease in patients treated by the

serums, the age of the child, and the increased care given to patients under any experimental treatments. Medical therapeutics, weighted down by empiricism, has been at a standstill until a year ago pathology opened up this new path.

In every series the statistics show that decreased mortality, in many instances, has sunk to one-half, and in no case has any series shown results unfavorable to the remedy. This has not been due to the mildness of any given epidemic, for while Roux's cases showed a decreased mortality of one-half, the mortality at the Trousseau hospital, where the remedy was unused, remained the same. Clinically, every physician with a wide experience speaks in the highest terms of this new therapeutic measure; all agree that the exudate clears more rapidly, that the temperature falls, that no ill effect is produced upon the heart or kidneys, and that the tendency to paralysis is not increased, though this last point requires further elucidation.

Following along the same line are the experiments of Dr. T. R. Fraser, of Edinburgh, suggestive, to say the least, that an immunity can be established against the poison of venomous serpents.

The newest application of serum therapy is in the case of cancerous growths. The *Gazette Hebdomadaire*, 27th October, contains a communication sent to the Académie des Sciences, by MM. Richet et Herricourt, giving favorable results in a large number of cases. Further details are promised.

Syphilis has been termed the most asexual of sexual diseases. In the October number of the *Archives of Surgery*, Mr. Hutchinson gives another illustration of the fact, by quoting the case of a member of the profession who consulted him for a typical eruption. Mr. Hutchinson gives it on his authority that primary lesion occurred by the bite of a flea.

The accession of zeal for the purification of food supply caused by the dread of cholera led to the paradoxical advice, "boil your ice." Bacteriological examination shows that freezing does not influence the number or vitality of the microbes. Even melted hail stones yield a goodly number. Yet it has been shown that in freezing a mass of water artificially the microbes are driven to the centre, leaving the clear margin of the block of ice free. It would be interesting to observe what process occurs when ice is formed in large sheets on the surface of lakes and rivers, and whether indeed they are not expelled entirely.

The interesting problem of cold-catching is receiving the attention it deserves. The observations of Pasteur show that when the temperature of fowls was lowered, the liability to contract anthrax was increased. It is probable that any variation in temperature induces a state of body rendering it open to the action of poisons which are generated either within or without the system. The extreme view of a specific infection receives no warrant. Van Buren explains the process as an arrest of function of the skin, whereby noxious materials are retained and act as blood poisons,

This theory of an auto-infection is in opposition to Lister's view, that it is due to a diminished action of the nerves of the surface leading to an increased action of the nerves of an internal organ in sympathy with them.

As men grow wiser they do not get over their desire for a concrete thing. It used to be a demon, now it is a germ. The most recent "manifestation" is the search for the typhoid bacillus in the urine as a diagnostic sign of the disease. The results so far have been negative.

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## OPHTHALMOLOGY.

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### OPHTHALMIA NEONATORUM.

(*American Journal of Ophthalmology.*)

Cures for this direful malady are forever being reported, and now we have one from Dr. X. C. Scott, of Cleveland, endorsed highly by Dr. J. L. Thompson.

It is the following:—

Hydrastia Sulph.	
Acidi Borici.	
Sodii Riborat.,	aa. gr. v
Tinct. Opii. Deodoratæ,	5 j̄s
Aq. Destil.	3 i

Mix and filter.

Instil this into the eyes every hour, and wash the eye out between whiles with tepid water; apply vaseline to edges of lids.

If the results claimed still continue on further investigation, the preparation is a most valuable Godsend.

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## BRITISH MEDICAL ASSOCIATION.

### SECTION ON OPHTHALMOLOGY.

Some most interesting papers were read before this section,—in fact, far above the ordinary type of material supplied at these functions.

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## ERYTHROPSIA.

Fuchs, of Vienna, presented in an able paper a new theory as to this subjective color perception.

As a result of his mountaineering in the snow region, he considers erythropsia as common among healthy eyes, and says he can produce it in patients from whom he has removed the lens, by sending them out to walk on the snow.



Fuchs' theory is that it is due to the visual purple becoming visible during its formation after exhaustion of it in the retina by long exposure to dazzling light.

MacNaughton Jones, of London, read a paper on the importance of correcting errors of refraction in neurasthenic women, and presented a series of statistics.

## PSEUDO MALIGNANT TUMORS OF THE ORBIT.

One of the most interesting, if not the most interesting, paper was that of Professor Panas, on the above subject; and coming from such an authority, it carries much weight.

He opens by inveighing against the common habit of attributing most or all tumors of the orbit, which disappear under medical treatment, to a syphilitic origin.

He cites many cases to the point, and on account of the general obscurity of tumors of this region urges the medical treatment before surgical interference.

Many neoplasms, thought to be lymphomata, sarcomata or syphilomata, ought to be attributed to the dyscrasia produced by some toxins.

The infectious principles, microbes or toxins act by means of the venous anastomoses and by the lymphatics, or after their penetration into the entire organism.

Panas here mentions a case of apparent bilateral tumors of orbit, associated with ozæna, which had also pre-existed, and considered the symptoms due to microbe infection of the cellular tissue of the orbit caused by the microbes of ozæna from the nasal fossæ.

Another case was a non-syphilitic woman from whose nose numerous polypi had been removed, and in whose left eye an exophthalmia developed; operation showed it to be purely indurated cellular tissue, with corresponding lateral masses of the ethmoid.

The explanation offered is that the removal of the polypi was accompanied by an infectious process, which propagated itself towards the orbital cavity, and upon this supposition the patient was treated with arsenic, which ameliorated her condition considerably.

In referring to tumors of the lachrymal gland, he refers to several varieties as caused by general infectious conditions, such as gonorrhœa, eruptive fevers, influenza, mumps, and perhaps syphilis, the peculiarity being that they are bi-lateral, and accompanied by engorgement of the parotid sub-maxillary glands. In some, the starting point was uterine trouble at the menopause, complicated with hemorrhage from a uterine fibro-myoma, and here he attributes the ocular trouble to an infectious state of the organism, as later a double plastic choroiditis developed.

Another case followed acute tonsillitis, in which streptococci were demonstrated in the secretion from the tonsils.

Panas' conclusions were:—

1. In the presence of a tumor of the orbit reputed sarcomatous, even should we be enlightened by the histological examination, we must think of the infectious origin, and not have recourse to any operation until previous medical treatment has proved negative.

2. Among means of treatment we possess, we must include mercury, iodine, arsenic and toxitherapy, as it has been attempted with erysipelas or the pure cultures of streptococci by Fehleisen, etc., etc.

Lassar and others have used by preference streptococcic serum, which is less dangerous, its toxicity being increased by addition of cultures of *micrococcus prodigiosus*. The injections are made into the tumor, at a remote point under the skin, or into the veins.

3. The research of the point of origin of the infection (nose, sinuses, pharynx), and the bacteriological determination of the toxins which are the cause, contribute to confirm the diagnosis, and to lay down the basis for a rational medical treatment.

It is only after this that we can have recourse to surgical interference, which is often powerless in the so-called sarcomata and lymphadenomata of the orbit.

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### OPHTHALMIA NODOSA.

At the June meeting of the Ophthalmological Society of the United Kingdom, Mr. Lawford reported an interesting case of the above. It is due to the penetration of the tissues of the eye by the hairs of certain caterpillars.

Mr. Lawford's case was from the foxmoth caterpillar (*Bombyx rubri*).

Symptoms being severe, protracted inflammation, which lasted with remissions and intermissions for six months, ultimately subsiding, leaving the eye little if any the worse.

The inflammation starts with severe conjunctivitis, then infiltration of the cornea, iridocyclitis and opacities of vitreous.

Small, firm, grey nodules developed in the conjunctiva, sclera, or iris, and on examination were found to contain a piece of the hair in the centre.

Only nine or ten cases have so far been reported, and these mainly in Germany.

Mr. Lawford considered the disease to be probably toxic in origin, the poison being contained in the hairs, which in some caterpillars have glands at their bases.

Grosz (Emil). *Durch ein wurmabtreibendes mittel verursachter Fall vollstandiger Erblindung:—Königl Aertzverein Budapest.*

Dr. Grosz reports in this a case of blindness resulting from the administration of extract of male shield fern and castor oil.

The patient took 8 grammes in sixteen hours,  $\frac{1}{4}$  gramme every half hour, on January 9th, the next day became unconscious, and on the 11th was completely blind, with widely dilated pupils. In a few days atrophy of the optic nerve was visible in the way of pallor, which has since become complete.

The toxic action was due to the filicic acid, and experiments on animals have shown that this acid combined with an oil is far more easily absorbed and in greater quantity than when alone.

Grosz mentions several cases from other authorities, some of them fatal, similar to his own, the toxic dose varying according to the freshness of the preparation, from 4 to 45 grammes, and more especially if the drug were accompanied by a dose of oil.

Grosz considers the loss of vision and mydriasis as of peripheral origin.

# Medical Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

ANNUAL MEETING.

*Stated Meeting, October 18th, 1895.*

A. D. BLACKADER, M.D., President, in the Chair.

SUCCESSFUL CASE OF TREPHINING FOR MENINGEAL HÆMORRHAGE—LIGATURE OF THE CAROTID.

Dr. F. J. Shepherd exhibited a patient who had been successfully trephined for meningeal hæmorrhage. The patient, aged 28 years, whilst coasting down a hill on a bicycle, lost control of his wheel, and was pitched headlong against a telegraph post. He was brought to the General Hospital in an unconscious condition. On entrance he vomited freely, and towards evening regained consciousness, and was quite bright. After a restless night he next morning became stupid; had paresis of right side. Dr. Shepherd saw him then for the first time, and as his stupidity was increasing and difficult to arouse him, and the paralysis of the right side was increasing, he came to the conclusion that meningeal hæmorrhage was going on; immediate operation was advised. A wound on head down to the bone was seen, extending from the anterior superior border of the right parietal bone downwards and forwards for some three inches. A fissured fracture could be seen at the bottom of the wound going down in the direction of the squamous portion of the temporal bone; a slight depression was also seen at the upper end of the wound. At this latter point the skull was trephined, and on removing the bone a thin clot was come down upon, which spread over the vertex and side of the brain. This clot was much larger towards the temporal bone, so another trephine opening was made about the middle of the wound, and a larger clot was met with, and the middle meningeal artery was seen empty lying on the dura-mater, the hæmorrhage evidently coming from deep down. An incision was made down to the zygoma, and the skull cleared of soft tissues, and from the last trephine opening downwards a piece of bone two inches wide by three inches long was chiselled out. Still, the hæmorrhage appeared to come freely from below, so the brain and its membranes were held aside with broad retractors, and the blood clot being removed the fracture was seen to run through the foramen spinosum and then across the body of the sphenoid. The artery was evidently torn in the foramen, and as the man had lost and was losing a considerable amount of blood,

Dr. Shepherd decided to tie the left common carotid artery, which he did very rapidly. The free hæmorrhage immediately stopped, though there was still venous oozing. All the blood clot was washed out, and the space to the base of the skull packed with iodoform gauze. The gauze was brought out of the lower end of the wound; all the rest of the wound was sutured.

On leaving the table the patient was in a very bad condition. Pulse 180 to 190, respiration 30 to 40, and shallow. A large enema of hot saline solution was administered, which immediately lowered the pulse to 140. Patient regained consciousness by evening, and conversed intelligently. Next day his condition was good; pulse 120, respiration 20. No paresis of right side, and patient could articulate well. There was much oozing of bloody serum through the dressings. On August 7th he was very restless, and there was so much oozing that the wound was looked at and the gauze packing carefully removed. No sooner did the last piece come away than there was a tremendous gush of what looked like arterial blood, and this jetted out in a very lively manner, so the gauze was immediately replaced. From this time forwards the patient went on well, with the exception of two days, when there was aphasia, the gauze packing being removed on the tenth day (August 17th), and no hæmorrhage resulting. He was walking about by September 1st, and there was no trace of hæmorrhage, nor was speech affected. He was discharged some days after, the wound almost closed. When shown to the meeting the patient was perfectly well.

#### WHITMAN'S PLATES IN FLAT FOOT.

Dr. C. Wilson showed two cases, with the appliances in use.

Dr. Shepherd had seen the appliances, and been greatly struck with them, but as considerable technical skill is required in their manufacture he had never used them. He had been satisfied to raise the inner side of the foot and thus make the patient walk on the outside; also performed the operation suggested by Trendelenburg, of dividing the tibia above the ankle so as to produce a condition of bow-legs. The operation is severe and not so satisfactory as the use of many technical contrivances.

#### PROGRESSIVE MUSCULAR DYSTROPHY.

Dr. Jas. Stewart showed two cases of this disease. In one, a lad 15 years of age, it was of the facio-scapulo-humeral type, the affected muscles being wasted to a marked degree. In the other the affection was more general and less marked.

#### GALL-STONE SURGERY.

Dr. G. E. Armstrong read a paper on this subject.

Dr. Shepherd said that it was a great advance to attack the obstructive point. Some had opened the bowel and endeavored to reach the obstruction through the duct from below. He thought

that to perform cholecystenterostomy with Murphy's button without first trying to remove the stones was a mistake. He referred to a case on which he had operated. The patient was deeply jaundiced and had xanthoma tuberosum. It was thought there was a close connection between the jaundice and the eruption. He was unable to recognize the normal anatomical relations of the gall-bladder, but he cut down where he knew the gall-bladder should be, and opened several pockets containing a number of large stones; there were altogether seven or eight large stones, each in a separate pocket. As the gall-bladder could not be brought to the surface, a tube was inserted and well packed round with iodoform gauze. For a long time the flow of bile was tremendous, but without any evil results. The stools gradually became colored, the urine normal, and the jaundice and xanthoma disappeared. How the common duct had been restored he could not explain. He had presented the case at the recent meeting of the American Dermatological Society held here, as a case of xanthoma cured by operation.

#### SYMPHYSIOTOMY.

Dr. Kenneth Cameron reported a case.

Dr. Lockhart wondered why the operation was not performed more frequently, as one had the germs now so much under control.

Dr. T. Alloway, while in Germany this summer, had had a conversation with Professor Zweifel, of Leipzig, who had sixteen cases, several of which he had seen. Zweifel thought there was a good future for the operation, and his methods differed from those ordinarily carried out in the following points: after dividing the symphysis, he did not use the forceps, but left it to nature to deliver the child; he used silver sutures in some cases and silkworm gut in others; and he used a broad leather strap pulled tight around the pelvis, and adjusted it, occasionally tightening or loosening, according to circumstances. He thought, moreover, that there would undoubtedly be cases of halt, from not obtaining good union.

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*Stated Meeting, November 1st, 1895.*

A. D. BLACKADER, M.D., President, in the Chair.

#### TEMPORO-SPHENOIDAL ABSCESS FOLLOWING MIDDLE-EAR DISEASE.

Dr. James Bell presented the patient, and gave the following history of the case:

He was aged 28; had first suffered from suppurative middle-ear disease and perforation of the tympanic membrane, six years ago. Excepting a running ear, had enjoyed good health until 1st of July last, when he began to suffer pain and tenderness about the mastoid, also œdema over the mastoid, severe headache, and persistent slight elevation of temperature. The end of August he was

sent to Dr. Buller, who trephined the mastoid on the 1st of September, but found no pus. The symptoms were unrelieved, the temperature remained high, there was intense headache and tonic spasm of the muscles of back of the neck and slight delirium. Five days later inequality of the movements of the lower portion of the face was noted. There was slight paresis of the lower left face. On 8th September I decided to operate next day. There was then, in addition to the symptoms already given, a low pulse (45 to 55), but no localizing symptoms and no optic neuritis. I decided to expose the brain by the removal of an osteoplastic flap, which would give access to both middle and posterior fossæ of the skull. Next morning, however, there was distinct paralysis of certain groups of muscles of the left arm, especially the extensors of the wrist. It was then clear that the lesion was an ascending one involving the motor area, and from the history and symptoms almost certainly a subdural abscess. I exposed the skull by extending the original incision in the soft parts, and made a half inch trephine, opening at a point one inch above the posterior root of the zygoma, and in a line with the posterior osseous wall of the meatus. In marking the point for the trephine pin with a drill, although prepared for a thin skull, and exercising the utmost caution, the drill went through the skull and wounded the posterior branch of the middle meningeal artery, which bled very freely. When the button of bone was removed with the trephine I cut further forwards with rongeur forceps, attempting to expose the artery in order to ligate it. I was unsuccessful, and was obliged to clamp it with the bone in a pair of Pean forceps, which were left *in situ* for several days. The dura mater bulged but did not pulsate, and on incising it, a couple of drachms of fœtid pus escaped from above, and on pressing up the base of the brain, about half an ounce more escaped from below with shreds of sloughy tissue. The brain surface was covered with lymph, and neither sulci nor convolutions could be identified. The wound in the mastoid antrum was made to communicate with the base of the skull, and the lower border of the trephine opening was cut away with rongeur forceps down to the level of the base of the middle fossa. A drainage tube was inserted along the base of the skull and brought out through the wound. After operation the temperature fell to the normal, the pulse rose to 80-90, and by next day the paralysis was noticeably less; in forty-eight hours it was almost gone, and in another forty-eight hours it was completely gone. All his symptoms improved, and he seemed to be on the way to recovery. On the fifth day after operation he became alternately drowsy and irritable. Later he became sullen and morose and difficult to manage, complained of severe frontal headache, tore off his dressings, insisted on getting out of bed, etc.; optic neuritis began to develop, and the pulse became slow and at times irregular. On the 30th of September (three weeks after the first opening of the cranial cavity) the wound was reopened. Through the trephine opening a livid fluctuating mass

protruded, which did not pulsate. I opened it, and evacuated a couple of drachms of pus. After using an exploring needle I opened higher up and evacuated about an ounce of pus. Passing my finger into the cavity, I found it to contain a considerable mass of sloughy tissue. It was carefully washed out with saline solution, and a glass drain inserted. The cavity was in the temporo-sphenoidal lobe, which was now a mere abscess wall. From the date of this operation the patient speedily recovered, and his optic neuritis has almost disappeared.

Dr. Armstrong said this was a new field in surgery that had recently been opened up, and enabled us to treat cases which in the past had too often proved fatal. No class of brain surgery was more promising than the treatment of abscess from fracture of the base of the skull or from middle-ear disease; the pus could be got at and cleaned away.

#### VESICAL CALCULI WITH SPECIALLY INTERESTING FEATURES.

Dr. James Bell presented specimens of vesical calculi from two old men.

The first was 70 years of age, who had prostatic troubles ten years ago. In October, 1892, a large stone had been removed by suprapubic operation in France, with relief for a year and a half. In August, 1894, he had been subjected to litholapaxy, but was not relieved. The operation was repeated in May, 1895, with no better result, and in August, 1895, a perineal lithotomy (lateral) had been done and a stone removed. The symptoms persisted, and on the 24th of October Dr. Bell had operated by suprapubic section, and removed eight separate stones and about thirty fragments which had apparently not been evacuated after crushing. The condition of the bladder explained why the stones had not been evacuated by either litholapaxy or perineal lithotomy. The posterior wall and trigone consisted of five separate pouches in which the stones and fragments lay.

The second was that of an old man of 75, in a condition of senile dementia, who had been first catheterized three years ago. Had for two years and a half used a catheter, sometimes as often as every half hour, without making any attempt to keep it clean. The second stone was about two inches long and as thick as an ordinary lead-pencil. The third stone was small and wedge-shaped, and was firmly impacted behind the projecting prostate, and would not have been found by any other than the suprapubic route. Both patients had done well.

#### PYOSALPINX.

Dr. T. Johnson-Alloway read a paper on this subject.

Dr. W. Gardner considered that these cases differed very much in character and acuteness, but he could not go as far as Dr. Alloway, and say that every case successfully operated on was a



life saved. In many cases after a period the acute stage subsided, and the patient was able to be up and about, and though recovery might not be complete, life was not endangered.

With regard to the time at which to operate, Dr. Gardner stated that he preferred to wait until the acute stage was past, unless rupture occurred, which was very exceptional, or urgent symptoms appeared to endanger life. His reason for delay was that after a certain time had elapsed it was found that the infective organisms had died out and the pus in the tubes had become sterile, and general infection of the peritoneum was thus much less likely to occur. Drainage, now-a-days, he did not resort to as much as formerly; in a goodly number he had not hesitated to close up the abdominal cavity, and no bad symptoms resulted; but this was not always the case. In choosing between gauze and a tube, he did not find gauze satisfactory, as he had at the end of twenty-four hours removed the gauze and had it followed by a gush of pent-up fluid. In future he intended to make use of iodoformized or sterilized wicking, which he thought would be more likely to drain. He used gauze to check hæmorrhage more frequently than for drainage. The French operation, which Dr. Alloway condemned, Dr. Gardner felt very differently about, and he had had a good deal of experience with it. Every patient had not got well, but the results in pus-tube cases had been very good. He thought it a valuable operation, and that the opinion of the profession was coming round very strongly in favor of it in France, Belgium and even in America. The cases in which he had done it had been very satisfactory indeed, and resulted in complete recovery.

Dr. Alloway, in reply, said the cases reported were picked cases of the most severe type, which could not have been relieved by any other form of treatment, though other cases of a less severe type would be published later on. His plain of drainage was a glass tube, with a strip of sterilized gauze in the centre; it had many advantages over the sucker suggested by Tait, and it need not be changed more than once in the twenty-four hours. Gauze packing, by itself, he only used when there was much hæmorrhage due to oozing. He had seen the French method of extirpation of the uterus performed in Paris by Sigond, Champonière and others, and it struck him as being harsh and unscientific. He had seen severe hæmorrhage occur which the surgeon was unable to control with the clamp. The operation seemed to be done more by the sense of feel than by the sense of sight, and the amount of force required to separate adhesions was often extreme. The greatest disadvantage of this method, he thought, was that the keystone of the pelvis was removed, and there would be great liability to have prolapse of the bowel. He more often gave morphia after operations than formerly, when required to relieve pain, but he thought it unwise to use it before operation, as it had a tendency to interfere with the normal peristalsis of the intestines being established after operation.

# THE CANADA MEDICAL RECORD

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## Editorial.

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### MIDWIFERY TRAINING FOR STUDENTS.

This subject is at present being brought prominently before the training bodies and Medical Council in England, and with only too much reason, the absurdly inadequate training of students which exists, and has for many years existed, being reflected in the abnormally high death rate in puerpura, in 1893 being 1 in 95 of the deaths from all causes. Picture to yourself an examining body like Oxford University, requiring no lectures, no clinical instruction, and no labors to be attended by its graduates, and neither the University of London, Oxford or Cambridge requiring any clinical instruction, and London and Cambridge only one course of lectures, the General Medical Council requiring a three months clinical course, attendance on twelve labors, and personally to have conducted three, and then compare this with what is required in Germany, 30 cases personally conducted, and the student here for his final examination must conduct on his own responsibility a confinement before the examiner, and send in a written report the day after. For the next seven days he must visit the woman twice daily; and if the patient die, he must make a post mortem examination and send in a report. Some examining bodies, and even in this country, accept from students certificates of "having been present;" it might perhaps have been well to add, in the same building or town where the confinement happened, as far as practical knowledge goes, and it would probably be quite as useful. The late Dr. Leishman, notwithstanding, stated that he could communicate more sound instruction in practical details at the bedside in one case of labor

than the student would pick up hap-hazard in the course of a casual attendance on twenty. If a student is simply to stand by a parturient woman, and listen to a lecture on the progress of labor, it is only a matter of mere mechanical expertness to produce even the very cries and groans from a mannikin in the class-room, and to teach him enough to pass any examination ; but woe betide his innocent and confiding patients. No amount of didactic teaching can teach a student midwifery any more than it could teach him medicine, anatomy, or how to sign his name ; and while on the one hand it may not be possible to teach as the Germans teach and as it should be taught, still the method adopted so generally in England, and so often here, of looking on and letting another do all the work, will simply send out thoroughly uneducated physicians, who will be a misery to themselves and a terror to the public, worse than any atrocity, inasmuch as there is no apparent ending to the far-reaching and constant results.

H. L. R.

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### THE ARCHIVES OF PEDIATRICS.

This monthly journal will commence its 13th year with the January number, under the business management of E. B. Treat, publisher, of New York, long identified with medical publishing interests. The *Archives* has been for twelve years the only journal in the English language devoted exclusively to "Diseases of Children," and has always maintained a high standard of excellence.

The new management propose several important changes in its make-up, increasing the text fifteen per cent., and enlarging its scope in every way. This will give room for the fuller contributions, and additional collaborators who have been secured for the various departments, all of which give promise of a more successful era than has been known even in the already brilliant career of the journal.

The editorial management will be in the hands of Floyd M. Crandall, M.D., Adjunct. Professor of Pediatrics, New York Poly clinic, and Chairman of Section on Pediatrics, New York Academy of Medicine.

COLLABORATORS.—A. Jacobi, M.D., J. H. Ripley, M.D., J. Lewis Smith, M.D., V. P. Gibney, M.D., L. Emmett Holt, M.D., Joseph E. Winters, M.D., Joseph O'Dwyer, M.D., Augustus Caille, M.D., Henry Dwight Chapin, M.D., A. Seibert, M.D., W. P. Nor-

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Such an eminent array of talent cannot but mean that all developments that are of interest, and useful in this important department of practice, will be fully noted in the pages of this journal. It will record progress in a wide range of subjects covering the entire field of Pediatrics, such as infant feeding and management, general and infectious diseases, general and orthopædic surgery, diseases of the eye, ear, throat, nose and skin; besides original articles, clinical lectures and memoranda, and society reports. A series of illustrated articles descriptive of the various children's hospitals is promised during the coming year. In addition, abstracts of every article of value appearing in American and European journals bearing on Pediatrics will appear.

It claims to be the medium through which the specialists reach the general practitioner, giving him a concise but complete review of the pediatric literature of the world every month.

Volume XIII begins in January, 1896. \$3.00 a year. E. B. Treat, Publisher, 5 Cooper Union, New York.

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### THE LOS ANGELES POLYCLINIC.

STATION D, LOS ANGELES, CALIFORNIA.

A monthly journal of Medicine and Surgery and the allied sciences, which was established in July last, and now circulates among several thousand Pacific Coast physicians, is edited by Dr. J. F. T. Jenkins, of Montreal, a graduate at Bishop's College in 1879, assisted by the staff of the Los Angeles Polyclinic as collaborators.

Dr. Jenkins is also Professor of Medicine in the Los Angeles Polyclinic, a school for graduates in regular medicine. We congratulate him on this evidence of ability and hard work in his profession.

The journal is in the best style of any of our exchanges and up to date in every respect, being replete with well selected abstracts and interesting original contributions and editorials, and printed with large type, leaded throughout. We will expect to be kept posted especially, in this journal with all that pertains to California as a health resort, a subject which is of great interest to the Northern physician, who often requires to be advised from a reliable source as to when to send, and what directions to give patients requiring the benefits to be derived from a sojourn in the dry, sunny, even-temperated climate of California.

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### THE AMERICAN MEDICAL REVIEW

Is the name of a new medical journal, the first number of which appears this month. Editor, Daniel Lewis, A.M., M.D.; Associate, Geo. B. Bradley, M.D.; Publishers, The R. N. Plummer Co., 106 Fulton Street, New York.

This new aspirant for a place among the two hundred odd medical journals of this continent enters with high aims and an ambitious mission, viz., to furnish the practitioner with the best, the broadest, the latest information on every professional topic. It seeks a place in medical literature of the day similar to that of the Review of Reviews in the world of letters, each number to present the month's life and work in the medical world. No original articles appear in the first number, but are promised in succeeding ones; an extensive array of concise abstracts, epitomized from the leading medical journals, constitutes the greater part of the number. An exceedingly useful feature is the Index Medicus, which gives a list of all the articles appearing in American medical journals during the month.

It is printed on sixty-four double-column pages; the headings of each abstract are arranged in a somewhat novel manner, occupying one corner of the article, thus economizing space. As a frontispiece there is an excellent cut of the late M. Louis Pasteur. The cover is of a novel design, pleasing and attractive, in black and red. The *American Medical Review*, with the improvements on the first number which will necessarily follow, in accordance with the programme laid out, bids fair to become a useful journal and a profitable enterprise to its publishers. Its price, one dollar a year, brings it in line with the recent ventures in literary periodicals where a reduction of price to one dollar per annum has led to vastly increased circulations.

## ANNUAL DINNER OF THE GRADUATES, UNDER-GRADUATES AND FACULTY OF MEDICINE, UNIVERSITY OF BISHOP'S COLLEGE.

The annual Medical Dinner of the University of Bishop's College was held in the Queen's Hotel, Montreal, on the evening of the 12th of December. Dr. F. W. Campbell, Dean, occupied the chair, being supported on his right by His Honor Acting Chief Justice Tait, and on his left by the Rev. Dr. Kerr. The attendance was large, and much enthusiasm prevailed. The fact that the Medical Faculty were now holding their twenty-fifth session gave an additional importance to the occasion. In replying to the toast of the Dean and Professors, the Dean, Dr. F. W. Campbell, spoke as follows:

Gentlemen,—Permit me to thank you for the cordial—may I say enthusiastic—manner in which the toast has been received by this very large gathering, composed of the Undergraduates, Graduates and Friends of the Medical Faculty of the University of Bishop's College. The occasion of our meeting this evening is one of more than ordinary significance, inasmuch as it signifies the fact that we have completed the first quarter of a century of our existence. What memories rush through my mind, as I mention, this fact! What faces rise before me of those who have toiled with me and passed over to join the great majority! As I look around this happy assembly, I see not a face of those who were present and participated in the birth of our Faculty—Sir Wm. Hingston, so lately honored by our gracious Sovereign; Dr. Perrigo, Dr. Leprohon, Dr. Baker Edwards, Dr. Wm. Gardner, Dr. George Wilkins and Dr. Tabb, my old colleagues, are absent. It is a source of regret to myself, as I am sure it is to you all, that circumstances have prevented them being with us. If upon this occasion I enter into some details connected with our birth and trace our subsequent life, I hope you will not consider me tiresome, or that I am overstepping the limits of legitimate congratulation. In after years, it becomes a matter of interesting history to be able to point out the actual spot where important events have occurred, and the ushering into existence of Bishop's College Faculty of Medicine in 1871 has proved of great importance to the Medical education of this city in particular and— I am egotistical enough to add—to that of the Dominion in general. To me it seems as if it was but yesterday, though it was on the 1st of February, 1871, that I was at Dr. David's house, No. 68 Beaver Hall Terrace, in company with that gentleman, and Drs. Hingston, Smallwood and Trenholme, and at which meeting Bishop's College Faculty of Medicine came into existence. Looking over the first Minute Book of the Faculty, I find that at that meeting the following telegram from Major Campbell, C. B., of St. Hilaire, was submitted:—

TO DR. HINGSTON,

“ More particulars of medical corporation required ; give them in person ; it will hasten matters.”

Accordingly, by late train that night, Dr. David left for Lennoxville, to lay before the authorities of the University a proposal to establish in Montreal its Faculty of Medicine. Three days later the same gentlemen met in the same place, when Dr. David reported that he had met with complete success. On the 9th of March following, a meeting of the Corporation of Bishop's College was held in the Synod Hall, Montreal, when the proposal to establish its Medical Faculty in this city was unanimously confirmed, operations to commence on the 1st of October, 1871. By the 1st of June, all the chairs were filled, and shortly after our first annual announcement was issued, a copy of which I hold in my hand, the Faculty being as follows :—

Professors :—Hingston, David, Godfrey, Leprohon, F. W. Campbell, Trenholme, J. Baker Edwards, Kennedy, Gardner, Wilkins and Tabb. Dean of the Faculty, W. H. Hingston, M.D., L.R.C.S.E., D.C.L. Registrar, Francis W. Campbell, A.M., M.D., L.R.C.P.L. Demonstrator, James A. Perrigo, A.M., M.D., M.R.C.S., Eng. Matriculation Examiner, Rev. R. W. Norman, M.A.

Its issue caused the medical sky to darken, the wind to blow a gale, which threatened to destroy our newly launched ship ; but it was strongly built, its crew had faith in the work laid out for them, and here we find it to-night, better fit for work than ever. We have ridden many a gale during the past 25 years, we have lost now and again a man overboard, and there has, in nautical language, been occasional crimping, but we have always been able to repair any loss sustained from such causes, and at this moment I have no hesitation in saying, we are, in proportion to our students, as well equipped as any other Medical school in Canada. Its first location was in the third story of Toupin's Block, on corner of McGill and Notre Dame streets, where two lecture rooms, a laboratory and dissecting room were rented, and on the 9th of October, 1871, the opening lecture was delivered by the late Dr. David. The attendance was not large, but among those present was the late Dr. Sutherland, Emeritus Professor of Chemistry in McGill College,—a life-long friend of the lecturer, who, in a few brief words, wished the bantling all possible success. The first name entered upon the registration book of Bishop's is that of Wolfred Nelson, who the following spring took his M. D. both from McGill and Bishop's. The trials we all met with during 1871-72 only fitted and inured us for those we had to encounter later on. I well remember lecturing for some two weeks to two students, only in the third week to find my class diminished 50 per cent., one of my flock had been led astray, evil counsels had prevailed, and he seemed lost to us. But my friend and fellow-professor, the late Dr. Trenholme, took the matter in hand. Before the week was

out he was again with us, took his full course with us, and graduated M.D. of Bishop's College in 1875. Although he has passed away, so satisfied were his family with the education he received, that they, to-day, are among the strong supporters of Bishop's College Medical Faculty in Montreal. The first Convocation of the Faculty took place at Lennoxville on the 4th of April, 1872, when the degree of C.M. M.D. was conferred upon the following gentlemen:—Wolfred D. E. Nelson, H. S. Cunningham, R. N. Webber, J. E. A. Lanouette, André Latour and Philippe Desilets.

During the summer of 1872, the building we at present occupy was built, and there for the past twenty-four years we have had our home. We have, I believe, set a most worthy example, one which is, in my opinion, *unique*, viz., that of the entire Faculty having lectured from its establishment up to the present moment without receiving the slightest money recompense. We have for many years had a money surplus, but instead of dividing it, we have expended it in the purchase of apparatus, and otherwise equipping the school with what is a necessary adjunct to every first class medical college. We have had great pleasure in watching the great success which has attended the majority of our graduates, one hundred and sixty in number, scattered throughout the world. While I draw no invidious comparisons in this respect, I cannot pass over this portion of my subject without alluding to a few who have prominently distinguished themselves: Dr. Wolfred Nelson, our first registered student, stands to-day among the first life insurance experts on this Continent; Dr. C. A. Wood, besides a graduate, was a member for years of our teaching staff. To-day, as an eye specialist—residing in the great city of Chicago—no man is better known throughout the entire Western States, and few, if any, have in so short a time contributed more to the literature of his specialty. If one goes to the city of Boston to-day, and enquires for the leading eye specialist, the name of Dr. Williams will be given. Two men stand next,—Derby and Chandler, both, I am told, considered equal—the last a Bishop's College graduate. If we pass to the beautiful city of Orange, N.J., we will find Dr. Tetreault, a Bishop's College graduate, filling the office of health officer, and occupying a leading position among the practitioners of that city. If we cast our eyes to the West and Southwest, to the Pacific slope, we find Bishop's graduates forging their way to the front, more than one man distinguishing himself as an operating gynaecologist, due to the facilities he found for practical instruction in the Western Hospital of this city. In the West India Islands the time is not far distant when Bishop's graduates will equal the number of all others combined. Coming nearer home, to our own great city of Montreal, I find over a dozen graduates, all doing well, and not a few of that number filling positions as teachers in our Faculty. We have indeed great reason to feel proud of the achievements of our alumni. Might I just for one moment speak of the facilities we possess as a school for the



teaching of obstetrics,—I believe it is unequalled in Canada. It must be a source of great satisfaction to our graduates to know that when thrown on their own resources in this important part of their profession, at the very outset of their career, their experience is equal to most men who have been for years in practice. We can with justice claim that we are indeed *the* Midwifery School of Canada. We deserve success—we shall have it in full measure before long. Twenty-five years ago we shook the dry bones of medical education in this city, and have contributed in no small degree to developing this city as the great Medical centre of the Dominion. But we need money ;—who is going to come to our aid to endow our Chair of Physiology, to-day filled by an Edinburgh University graduate—a man whose course is not equalled in Canada,—I might with truth say, not excelled, if equalled, on this Continent. I need hardly name, Dr. Bruère. (Great applause.)

To-day we have 70 students in attendance, and these, I am sure, you will be pleased to learn will shortly be increased to over one hundred, by the addition of the students of the Dental College, with which Bishop's College has signed an agreement for affiliation, and granting the degree of D.D.S. I will not weary you with the details of what may be termed the Dental fight, but will content myself by saying that it is over. I thank God for it. The entire Dental body of this Province are to-day united in bringing our *Alma Mater* to the front. But why detain you longer? My task is done. I have as briefly as possible given you our history and our hopes. Ah! the last is that which fills me with joy. In the future I can see their fulfillment. I hope I may live to see it. It is hardly likely, though possible, that I might be alive on our fiftieth anniversary. If God should so permit it, I might even take a look in at such a social gathering as this ; and though my step might, and most likely would, be feeble, I trust my voice might be strong enough to speak of great success, of faith in our future, and my never ceasing love and devotion for the Medical Faculty of Bishop's College. (Great applause.)

# Book Reviews.

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**Pregnancy, Labor, and the Puerperal State.** By Egbert H. Grandin, M.D., Consulting Surgeon to the New York Maternity Hospital; Consulting Gynæcologist to the French Hospital, N.Y., etc.; and George W. Jarman, M.D., Obstetric Surgeon to the New York Maternity Hospital; Gynæcologist to the Cancer Hospital, N.Y., etc. Illustrated with forty-one (41) original full-page photographic plates from nature. Royal octavo, pages viii, 261. Cloth, \$2.50 net. Philadelphia: The F. A. Davis Co., publishers, 1914 and 1916 Cherry street.

We have in this volume a companion to Obstetric Surgery, forming together a very good practical and up-to-date work on obstetrics. This work avoids the mistake, made in so many books on this subject, of having a large portion devoted to Embryology, Anatomy, Physiology, etc., and we quite agree with the authors, that all this should have been mastered by the student before he begins obstetrics. We must especially commend the plates, which are all new and very practical, and which will enable the student to grasp the points intended to be taught at once, although both in this country and in England the back is not the position ordinarily chosen for confining a woman in, unless in cases of operative interference. This work is divided into three parts: I. Pregnancy, with three chapters, shorn of a great deal of the usual verbiage, and stated so that the student can readily grasp the different points. II. Labor, with four chapters, the first two being the mechanism and clinical course of labor, both very good; the third chapter, the management of normal and abnormal labor, the first part of which, the management of labor, which is really the *raison d'être* for the book, is not up to the standard of the other chapters, *e.g.*: the very slight notice given to the management of the anterior lip when capping the head, the want of the necessary knowledge being a fruitful cause of lacerated cervix. Again, in the care of the perineum, whilst it may serve the practitioner with experience, is not suitable for students. Again, the finger should avoid the rectum if at all possible; but the treatment of the placenta when extruded from the vagina as regards the membranes, and the theory of the cause of the retention of the membranes, are certainly to be condemned as not being founded on facts, any more than the statement about the use of iron in post-partem hæmorrhage, etc. Chapter four, devoted to the care of the newborn child, is decidedly good. Part III consists of two chapters on the normal and pathological puerperium, both of which are vastly better to anything we have yet seen in print. The work complete should be on every physician's shelf, and the student who possesses a copy will be able to post himself on everything new in Obstetrics.

**The Practice of Massage, Its Physiological Effects and Therapeutic Uses.** By A. SYMON ECCLES, M.B., Aberd; Member of the Royal College of Surgeons, England; Fellow Royal Medical & Chirurgical Society and Medical Society, London; Member Neurological Society, London, etc. Mac-Millan & Co., publishers, London and New York. For sale by The Copp, Clark Co., Ltd., publishers, 9 Front street West, Toronto.

During recent years remedial applications to disease other than the administration of drugs has received greater attention from the regular medical profession than previously, such as the use of electricity, hydrotherapy, special forms of exercise, etc. Among these means of restoring health, massage takes a prominent place, but as yet the methods of its proper application are not generally thoroughly understood, and, like most other forms of treatment, unless rightly used but indifferent results are obtained. Hence a work up to date in all the details of its practice by such a recognized authority as A. Symons Eccles should be welcomed by the profession. The author gives in the volume the results of his personal experience, and recommends no modes of employing massage which he has not thoroughly tested himself, he being, besides a practitioner of medicine, a practical masseur. In the first chapter, the five methods of applying the manipulations are described, viz., by *effleurage*, *pétrissage*, *tapotement*, *vibration* and *massage à friction*, and also how to apply massage to the different parts of the body, and what variety is best adapted to each.

In chapter II. the physiological effects of its application are described, and some rules for its administration given.

In chapter III. we learn that the therapeutic indications fulfilled by massage are: 1, Mechanically and directly, elimination of waste products from the tissues under manipulation is increased, the absorption of infiltrations and exudations is greatly favored, adhesions are attenuated, sometimes broken down, and even organized thickening may be reduced; 2, nutrition of the part is improved, vascularization is increased, and metabolism is augmented; 3, indirectly, massage acts as a derivative, relieving congestion of the internal organs by attracting the flow of blood to the surface and muscles. Molecular vibrations are set up, stimulating the nervous system, acting through it reflexly, thus exciting secretion, while, on the other land, its sedative influence relieves pain and reduces over activity.

In succeeding chapters its uses are dwelt upon in the following affections: myalgia and rheumatism, arthritis, sprains, dislocations, fractures, relaxation of ligaments; in diseases of the stomach, liver and intestines, in anæmia, obesity, uricacidæmia, glycosuria, myxœdema, rickets, scoliosis; in diseases of the nervous system, such as sciatica, paralysis, occupation neuroses, chorea, hypochondriasis, neurasthenia, insomnia, hysteria, headache.

The last chapter describes its uses in diseases of the heart and asthma.

From a perusal of these pages it is evident that good results from massage depend very much on its proper application by manipulators skilled by long training, who may under the directions of the physician be trusted with the care of the majority of cases; but Dr. Eccles, while having a high appreciation of massage as a remedial agent of special effectiveness that comparatively few know or recognize at present, thinks that the manipulations in difficult cases must be practised by the physician himself, more especially in diseases of the gastro-intestinal tract.

There are no illustrations in this book which would seem to be a fault in a work of this kind, but the descriptions are clear, and the perusal and study will enable any one to become familiar with the latest methods of applying this valuable curative means in the cases where it is indicated.

**Pathology and Surgical Treatment of Tumors.** By NICOLAS SENN, M.D., Ph.D., LL.D., Professor of Practice of Surgery and Clinical Surgery, Rush Medical College, Professor of Surgery Chicago Polyclinic, etc. (710 pages and 515 engravings and colored plates). W. B. Saunders, 1895. Price \$6.00.

Any work coming from Senn is sure to be well received the world over by the Medical profession.

The vast amount of clinical material, which he has collected and fully illustrated by photographs and original drawings, make the volume so valuable that no practitioner can afford to be without it. Senn is not only a skillful and experienced surgeon, but he possesses those qualities which go to make up the best kind of an author and teacher. He is systematic in dealing with a subject, and clear in his descriptions. The chapters on the Origin and Nature of Tumors, their Etiology and Pathology, are specially attractive. It is interesting to note how little he thinks of caustics, limiting their use to small benign tumors. He reports 12 cases of malignant tumors treated with the toxins of erysipelas, as advised by Coley and Bull without permanent benefit.

In discussing the etiology of malignant tumors, Senn somewhat reluctantly says that proof is not conclusive showing them to be of microbic origin. He teaches with Cohnheim that a tumor may be made up of embryonic cells, the offspring of embryonic cells; but he goes a step further, and says they may also develop from "mature cells, which, for some reason, have failed to undergo transformation into tissue of a higher type, and which may remain in a latent, immature state for an indefinite period until growth is excited by heredity or other exciting causes."

Altogether, the general high standard of the work must secure for the volume a place beside that splendid book, the "Principles of Surgery," by the same author, which is so indispensable to every surgeon and teacher.

# PUBLISHERS DEPARTMENT.

## LITERARY NOTES.

Ex-President Harrison, of the United States, receives a larger sum for his articles on "This Country of Ours," which he is writing for *The Ladies' Home Journal*, than has been paid to any public man in America for magazine work of a similar nature. His first article, in the Christmas number of the *Journal*, sold over 100,000 extra copies of the magazine, of which 725,000 copies were printed as a first edition.

### EDNA LYALL'S "DREAM CHILDREN."

The famous English authoress, Edna Lyall, writing of her life and early literary influences and work in January *Ladies' Home Journal*, says: "From the early days of my authorship up to the present time there has always been a story on hand, and writing has become so much a part of my life that it is difficult quite to understand what life without a vocation would be like, or how people exist without 'dream children.' They cost one much suffering, and bring many cares and anxieties; they are not what we could wish, and we are conscious of their faults. Still they are our 'dream children,' and when they cheer the dull or interest the overworked there comes a glad sense that it has all been worth while, and we are thankful that the gift was given us."

### PROFESSIONAL OPINIONS OF INGLUVIN.

*Edward Warren (Bey), M.D., C.M.:*—

"Hereafter I shall prescribe 'Ingluvin' liberally and with great confidence in its therapeutic value."

*Chas. Low, M.R.C.S.E., etc.:*—

"Medical men will never regret using 'Ingluvin.'"

*Edward Cotten, D.N., C.P.P., London:*—

"'Ingluvin' is particularly efficacious in vomiting produced by pregnancy."

*Waldo Briggs, M.D.:*—

"I have used 'Ingluvin' extensively, and find it far superior to any remedies for Vomiting of Pregnancy, Dyspepsia and Indigestion."

### A NEW VOLUME OF THE LIVING AGE.

The two hundred and eighth Volume of *Littell's Living Age* opens with the issue of the week ending January 4th. The beginning of a new volume is an excellent time for the beginning of a new subscription, especially when, as in this instance, it includes a new—a lower price. For 1896, the subscription price will be six dollars. Good news truly to its subscribers and to all others who appreciate and enjoy good reading, for no one who wants the best of choice literature should be without it.

The reduction in price means no reduction in size or falling off in value, or any lowering of the high standard which it has always maintained. Foreign periodical literature continues to grow not only in bulk but also in the variety, interest and importance of the topics treated; and it absorbs to a greater extent every year the works of the most prominent authors of the day.

For the amount and quality of reading furnished, the price (\$6 a year) is very low; to those desiring the cream of both home and foreign literature, the publishers make a still cheaper offer, viz.: to send *The Living Age* and either one of the American \$4.00 monthlies, or weeklies, a year for \$9, or any \$3 monthly for \$8. With *The Living Age* and one or other of our leading American monthlies, a subscriber will, at remarkably small cost, be in possession of the best which the current literature of the world affords.

LITTELL & Co., Boston, are the publishers.

It is difficult to predict the future work in the magazine field. No one would have conceived, ten years ago, that a thirty-five-cent magazine would ever contemplate the use of the expensive lithographic processes in printing. But a ten cent magazine has put in a large and complete lithographic plant, with the avowed purpose of furnishing a certain amount of color-work every month. The first result is the reproduction of a water color, drawn by Rossi for *The Cosmopolitan*, and redrawn upon stone by *The Cosmopolitan* lithographic artists, and printed upon *The Cosmopolitan* lithographic presses. Work upon even a more extended scale is promised for the January number.