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## *Original Contributions.*

### ADDRESS IN MEDICINE.\*

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#### THE CIRCULATION VIEWED FROM THE PERIPHERY.

*Mr. President, Ladies and Gentlemen,*—In the first place I must thank you, and through you the whole British Medical Association for the high honor which has been conferred on me in my appointment to deliver this address. This is an honor and a privilege which happens to very few men, and that only once in a lifetime. I feel the dignity of the office and the obligations which it entails all the more deeply inasmuch as the invitation in the first place came from the members of the Association resident in this city. When the invitation was conveyed to me I rather hesitated to undertake a task which I felt I could only inadequately perform, but, on the other hand, I looked upon the request as a command, and it seemed to me that I could scarcely refuse to undertake a duty for which I had been selected by my Canadian brethren.

After accepting the task my difficulties began, and my first was in choosing a subject which would have a more or less general interest. The whole domain of medicine has been traversed by addresses, and it appeared as if there was no corner left for me. I could find nothing new under the sun, but there was still left to me the privilege of talking of the glories of the past, and what medicine has done for humanity. Again, I found that any attempt at a hackneyed survey of the advances of physics, say during the Victorian era, would

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be merely clothing in my own language facts with which you are all familiar, and in the advancement of which many of you have taken an important part. I further found that standing on the high pedestal on which you have placed me, I was, to a certain extent, placed above criticism, and therefore could not fairly deal with polemics.

It finally occurred to me that I might find some devious path or unbeaten track in the vast field of medicine which I might pursue with some measure of success. I intuitively turned my attention to the circulation, the ramifications of which pervade the whole field, and as writers hitherto on this subject have almost invariably traced the circulation from the centre to the periphery, it occurred to me that we might get a fresh view if we turned our attention in the opposite direction. There are numerous treatises on diseases of the heart and aorta, but until recent years a careful study of the peripheral circulation has been largely left to physiologists and pathologists. The experimental work of Cohnheim will ever remain a landmark in the pathology of the circulation, while to the school of Ludwig physiologists are no less indebted. To physiology medicine owes much, and all great advances are being prosecuted along physiological lines. If there have been any apparent divorce between the scientific basis and the practical application of our art, it is not due to any too rapid advance of physiology, but to physicians being too slow to fructify the field which has been tilled by physiologists. I have previously asserted that diseases of the heart most frequently arise from causes acting on the periphery, and hence there is here no room for specialism. The man who only studies the circulation with the aid of a stethoscope is a positive danger to society. I can, therefore, with an easy conscience and a sense of much satisfaction, devote some attention to that periphery.

The capillaries through which the interchange of nutritive pabulum and gases takes place between the blood and tissues, play a most important rôle in the animal economy. Yet they have received very inadequate attention from clinicians. Perhaps it has been thought that their structure and position could be so briefly described that any circumlocution in their description was unnecessary. But however simple their structure, and however apparent their functions, they constitute a vast filter bed for conveying nutritive material and oxygen to the tissues and for removing waste products therefrom. A careful study of how these changes take place, and how the functions of these little tubes are carried on, has always seemed to me a matter of as much importance as even the action of the heart itself. These little vessels are of extreme tenuity and delicacy, consisting of a single layer of endothelium, yet they are much stronger than most people imagine, and are capable of standing considerable internal pressure; they vary from about 0.5 to 1 millimetre in length, and from 7 to 13 micro-millimetres in diameter.

They are to a certain extent elastic, or at least they have the capacity of adapting themselves to the amount of blood which is driven through them. Their importance has been aptly described by Leonard Hill, who says: "The blood is brought into intimate relation with the tissues by diffusing through the endothelial wall of the capillaries, and this wall is of great tenuity; thereby takes place that change of material which maintains the combustion of the body and the fire of life."

The capillary bed is a vast territory which pervades every tissue and organ of the body, and so numerous are these little vessels that it would be difficult to stick the point of a needle in any vascular area without wounding one or more, but in neurotic individuals you may wound many such vessels without drawing blood. In very plethoric individuals and in cases of polycythaemia, the capillaries of the body are fairly replete, but in ordinary mortals, especially in those of neurotic temperament, perhaps not a third of the capillaries are full at any one moment. Apply a sinapism to a very pallid skin, and you may wonder where all the turgid capillaries have sprung from. From the fact that under normal circumstances a sufficient quantity of blood cannot get through the arterioles to keep the enormous capillary bed full, the lateral pressure and the velocity in the capillaries are ever-varying quantities. When Leonard Hill stated that the pressure in the capillaries under certain conditions is often over 100 mm. of mercury, I thought that there must be some error of observation, as I was under the impression that such pressure would rupture these delicate little vessels, but I remembered the old advice: Do not think; try. I tried, and found that Leonard Hill had rather understated the fact, as I found variations from about 50 to 2,000 mm. of water. I also found equally great variations in the velocity of the blood in the capillaries. In text-books on physiology it is put down from 0.2 to 0.75 mm. per second; but my observations have given records from about 0.5 to 25 mm. per second. The capillary bed covers an enormous area; take, for example, the lungs, where all the air vesicles are surrounded by a meshwork of capillaries, and the surface of the air vesicles in the average individual has been calculated by Zuntz at 90 square metres. Numerous attempts have been made to estimate the capacity and sectional area of the capillaries, but in my opinion these questions are still unsolved. The method adopted of estimating the sectional area of the systematic capillaries is simplicity itself. We all know that with any given force the velocity is inversely as the sectional area. The mean velocity in the aorta has been set down as 320 mm., and in the capillaries as 0.5 mm. in the second; therefore, on this basis of calculation the sectional area of the systematic capillaries would be 640 times that of the aorta. It is not difficult to show that the premises are wrong, so it is highly improbable that the conclusion can be right. It at once becomes absurd if

we consider how this calculation would work out for capacity; if we reckon the average length of a capillary as 0.75 mm., and the length of the aorta as 480 mm., accordingly the aorta should hold as much as all the systematic capillaries. From the effective mean lateral pressure in the arteries it is difficult to draw any conclusion as to the velocity in the aorta, because the force imparted to the blood in the aorta by the heart is an ever-varying compound of kinetic and potential energy. Even if you did arrive at any fairly accurate idea as to the mean velocity in the aorta, it would not be correct to draw any inferences from a comparison between the velocity of the blood in the aorta and in the capillaries, because the conditions determining the velocities in the two sets of vessels are not comparable. The higher the potential in the arteries the greater the velocity in the capillaries, but as this arterial potential is induced by obstruction to the outflow the velocity in the arteries will be diminished. As Leonard Hill appropriately says: "The circulation of the blood follows certain definite laws; unfortunately, the conditions of the flow are so complicated that these laws remain for the most part undetermined. A viscous fluid driven by an intermittent pump, which circulates through a system of branching elastic tubes of varying capacity; a system of tubes into and out of which passage of fluid takes place either by osmosis, filtration, or secretion; a fluid which varies in viscosity, a pump which varies in force, and tubes which have an ever-changing diameter and co-efficient of elasticity."

In a paper on tubal nephritis published in 1883, and in one on the pathology and treatment of dropsy in 1886, I dealt with the capillary circulation. I have long been in the habit of estimating the velocity by compressing the blood out of the capillaries in a given area and then watching the quickness or velocity of the return. This has served, and still serves, my purpose, but when I wish to record my observations I use a glass rod 10 millimetres in diameter. With the flat end of this rod I compress the capillaries, and then with a stop-watch recording fifths of a second I time the period of the return of the blood. If you divide the radius of this rod (5 millimetres) by the time, you get the velocity per second. For these observations you must select some spot where there is a network of capillaries which you can completely empty, such as those in the back of the hand or finger, and you must also choose a spot where the return current flows from all parts of the circumference. This method is so simple and accurate that it is a matter of surprise to me that, so far as I know, it has never been thought of before.\*

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\*Dr. George Oliver has drawn my attention to a capillary dynamometer devised by Dr. Alexander Haig for gauging the amount of uric acid in the circulation and estimating the blood pressure. Dr. Haig compresses the blood out of the capillaries under pressures varying from about 5 to 20 oz., and times the periods of compression and of the capillary reflex. Dr. Haig says that his "instrument gives a constant definite area of pressure—a definite and measurable force, the pressure being applied for a definite and constant time, measured

When fluid is circulating in a capillary tube, the axial velocity is double the mean velocity. Now, the erythrocytes travel in the axis, but as they occupy at least four-fifths of the lumen of the vessel, the mean must be fully 0.8 of the observed velocity. For estimating the pressure in the capillaries I use a modification of v. Kries's apparatus. For applying the pressure I use three sizes of glass plates measuring 20, 100 and 400 sq. mm., so a gram pressure on each of these plates represents respectively 50, 10, and 2.5 mm. of H<sub>2</sub>O. As before stated, I have recorded capillary pressures, varying from 50 to 2,000 mm. of water, and my velocity records have ranged from about 0.5 mm. to over 25 mm. per second. Any one with a capillary velocity at the level of the heart which physiologists set down as normal might appropriately take up the refrain, "The hour of my departure's come."

The study of the lateral pressure and velocity of the blood in the capillaries is an exceedingly interesting one. A combination of these two forces represents the energy of the blood in the capillaries, and no doubt this energy is derived from the heart, and stands in direct relationship to the force of the cardiac contraction; the greater the force of the cardiac output the greater will be the energy in the capillaries, but the component elements of this energy—lateral pressure and velocity—need not bear any direct relationship to those respective elements in the arteries. These two conditions (velocity and pressure) might be said to stand, within certain limits, in an inverse ratio to one another, the more rapid the flow the less the lateral pressure, and vice versa. The lateral pressure depends on the statical condition of the blood, and just in proportion as you introduce movement you convert the force of pressure into that of velocity.

If you wish to drive a certain quantity of fluid through a tube, the velocity will depend on the force of the propulsion minus the obstruction to the outflow, with the inertia or viscosity of the fluid (there is no fluid perfectly mobile) and the friction of the tube; and the lateral pressure will increase as the outflow is obstructed—in short, as the statical condition is maintained. The vis viva or energy of the blood in the capillaries can be represented, as in any other vessel, by the formula  $\frac{MV^2}{2}$ . The component forces of this energy—pressure and velocity—are constantly varying, so, for the sake of clearness, it will perhaps be better to describe them separately.

The pressure stands in direct relation to the freedom of the in-  


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 by a metronome beating half seconds, the length of time the blood and color take to return being measured by the same instrument." Our methods are similar, but our objects are different. At one time I thought of drawing up rules for estimating the arterial blood pressure by the capillary velocity, but I soon found that the necessary corrections on account of the contraction or dilation of the arterioles, the position and temperature of the part under examination, and perhaps the viscosity of the blood were so numerous as to materially lessen the clinical value of any such method.

flow and the obstruction to the outflow. For example, take a very cold hand: the arterioles and small arteries may be so contracted that the mass of blood supplied to the capillaries is greatly diminished, and the lateral pressure correspondingly falls. Even in the arterioles there may be such a drop in the pressure-gradient that there may be a difference of 50 mm. of Hg between the lateral pressure in the digital artery and that in the radial. In cases of local syncope the lumen of the arterioles supplying the affected district is obliterated and the capillary pressure is reduced to nil. On the other hand, if you warm the hand, or take a glass of whisky, which dilates the arterioles, the mass of blood in the capillaries is augmented and the pressure rises; and the fall in the pressure-gradient between the arteries and capillaries becomes more gradual. An increased obstruction in the arterioles over a wide tract, such as the splanchnic area, raises the general arterial pressure and lowers the capillary pressure in the area supplied by the contracted arterioles.

As Cohnheim long ago pointed out, if you obstruct the outflow by tying a ligature around the limb, you greatly raise the pressure in the veins and capillaries distal to the ligature, but as you cannot thus completely obstruct the venous return without at the same time obliterating the arterial supply, the pressure in the veins does not rise so high as that in the capillaries, and the pressure in the capillaries does not attain the level of that in the arteries, and, of course, that in the obstructed artery does not rise above the general arterial pressure at the same level. With any given energy in an artery the pressure and velocity in the capillaries supplied by that artery stand in an inverse ratio to one another; the greater the pressure the less the velocity.

I have corroborated v. Kries's observations as to the effects of gravity on the capillary pressure, and like him I have found that the increase is usually less than one-half the hydrostatic effect—for example, if you take the capillary pressure in the finger at the level of the vertex, and then take it when the finger is lowered, say 600 mm., the increase may be only 200 mm. of water in place of an increase of 600 mm. of blood which it would be in an artery. I have also found that the increase is not at all uniform. It may vary enormously in different individuals, and in the same individual under different conditions. It largely depends on the condition of the vasomotor mechanism of the part which you are examining. If the arterioles be contracted and the inflow to the capillaries be obstructed, the increase may not be a third of the hydrostatic pressure, but if the arterioles be much dilated the increase may be half or even two-thirds of the increase which has taken place in the artery. Leonard Hill has pointed out to me that this increase chiefly takes place when the limb is immobilized; and when active movements are going on the blood is compressed out of the capillaries and this

increase in the lateral pressure does not take place. There is, however, under these conditions, an increased hydrostatic pressure in the arteries, as Leonard Hill was among the first to demonstrate, and this must be expended in the arterioles and capillaries either in the form of increased pressure or augmented velocity, but more anon when we come to speak of the latter component of the increased energy.

I have shown that the capillary pressure in the foot even when immobilized is often less than that in the hand, and much less than that in a grog-blossomed nose. This is entirely due to the wonderful mechanism of the vasomotor system.

Some people are very liable to cold feet in bed, and such appendages to a lady seem to have led up to a divorcee in the United States of America. In such cases the part may be fairly comfortable before going to bed, but once the horizontal posture is assumed the arterial pressure and capillary velocity fall, there is not a sufficient amount of fuel carried to the extremities to keep the large cooling surface warm. Here the defect is in the initial energy, and besides improving the general arterial pressure it would be advantageous to keep the feet much lower than the head and shoulders. Possibly if the lady had been under medical treatment she might have conserved her own comfort, preserved the affection of her husband (though she might not have thought the affection of the brute worth preserving), and saved the notoriety of the divorcee court.

The velocity of the blood in the capillaries is, if possible, even more interesting than the pressure. It varies enormously in different individuals under different conditions. As I have before said, the range of my observations has been from less than 0.5 to 25 mm. per second. We shall now consider the conditions under which these variations occur. In the first place it depends chiefly on the potential in the arteries—the higher the arterial pressure the greater the velocity in the arterioles and capillaries. High arterial tension drives the blood through the arterioles and capillaries with great velocity, but certain little corrections have here to be borne in mind. If the arterioles of a small area, such as the hand, be contracted, the general arterial blood pressure is not affected; the blood travels in the direction of the least resistance, so the supply to the hand is diminished, and although the capillary pressure is diminished, the velocity is not increased—in fact, the diminished supply spread over a large capillary district should tend to lessen the velocity. The velocity in the capillaries is not comparable with that in the arteries, but with that in the arterioles; and as velocities are inversely as the cross sections, you could easily calculate the sectional area of the capillaries if you only knew the velocity of the blood in the arterioles and their sectional area.

When the arterioles are dilated in any area, as at the com-

mencement of an inflammation, the whole of the capillaries are opened up and engorged with blood, and with this increased mass the pressure is raised, but the velocity is also heightened owing to the arterial potential remaining high and the resistance in the enlarged capillaries being diminished. The resistance is inversely as the square of the cross sections, or the fourth power of the diameter, or directly as the square of the velocity. We have seen how hydrostatics affect the pressure in the capillaries, but the velocity is much more uniformly affected. It is usually sufficient to lower the hand 320 mm. in order to double the velocity, and in the capillaries of the foot the velocity is usually extremely rapid. Velocity,  $V = \sqrt{2gh}$ ; but in the capillaries we have further to take into account the sectional area, which has not yet been accurately computed either in whole or part.

So readily is the capillary velocity affected by the arterial pressure that, *cæteris paribus*, you can easily detect a difference between the velocity in the back of the hand and in the fingers; when a warm hand is hanging the velocity in the finger is greater than in the back of the hand, and if the relative position of these parts be altered the velocities are reversed. I purposely said a warm hand, because in a cold hand the capillary circulation in the fingers is often very languid. After removal of an Esmarch's tourniquet the capillary velocity in the flushed extremity is considerably augmented.

Any obstruction to the outflow from the capillaries diminishes the velocity in them. The hydrostatic effect of the blood in the veins would materially obstruct the capillary flow only for the provision of valves, and the muscular compression hastens on the blood and thus diminishes the statical condition. However, certain capillaries, such as those of the liver and kidneys, are exposed to considerable backward pressure when from any cause the venous pressure is raised.

When the velocity in the capillaries is reduced to one millimetre or less per second the blood becomes surcharged with carbonic acid and the skin or organ supplied becomes of a dusky hue. This appearance immediately disappears if you increase the capillary velocity; for example, when the hand is blue and passively congested from cold, or the so-called local asphyxia, if you let it hang down you increase the velocity and you quickly see bright red spots intermingled with surrounding lividity, and soon the color of the whole hand improves. In the cold livid dependent hand the color of the fingers is better than that of the back of the hand. When you get cardiac failure, with or without any obstructive lung disease, you frequently see the upper part of the body and the hands quite dusky, while the legs and feet, which are at a lower level, may be pale. In one marked case of cardiac failure where the upper part of the body was livid, I saw one foot and



part of the leg in a state of local syncope and as pale as marble. These patients do not require a cylinder of oxygen, with which they are frequently plied, but the judicious application of a little common sense, such as the intavenous injection of small doses of adrenalin or some cardiac tonic. In cases of Raynaud's disease the local syncope is ascribed to vasomotor spasm, but really the epasm, if it exist, is a very mild affair. In these cases the arterioles shut down because there is not sufficient blood pressure to keep them open. The arterial pressure is always low, and the blood is deficient in lime salts and viscosity. In the cases of local asphyxia the arterioles are not closed, but the arterial potential is low, the velocity in the capillaries is defective, and the *vis viva* is not sufficient to drive on the blood stagnating in the veins. In cases of erythromelalgia the reverse happens; the velocity and pressure are both increased in the large engorged capillaries.

In many cases of pneumonia with low blood pressure, the vasomotor taps in the splanchnic area are all open, and the aorta is drained before it terminates in the iliac arteries; the bulk of the blood is retained in the chest and abdomen, and the quality supplied to the lower limbs is diminished. Moreover, the extremities are often colder than the body, and the arteries contracted. The lower level of the limbs increases the velocity in the capillaries and veins, and consequently the capillaries of the foot and leg are often blanched and the veins comparatively empty when the upper part of the body appears congested and purple.

#### VISCOSITY OF THE BLOOD.

The viscosity varies greatly, and is no doubt the great cause of resistance in the capillaries. Normally it is about five times that of distilled water, and my friend, Dr. John H. Watson, who has recently been doing some valuable work on this subject in association with a physicist, Dr. A. du Pre Denning, has found that in many diseases the viscosity is nine or ten times that of distilled water. The coefficient of viscosity in the tarry blood of Asiatic cholera is often so great that it will not pass through the capillaries. Dr. Graham Brown and others have found that a rise in temperature lessens the viscosity, and hence a febrile temperature lessens the resistance and so diminishes the work of the heart, but it does not follow from this that a high temperature in fever is an advantage, as there are many more efficient ways of lessening the viscosity. As the velocity diminishes the blood becomes more charged with  $\text{CO}_2$ , which enlarges the red corpuscles and further increases the viscosity. Drs. Watson and Denning have devised a very convenient capillary viscosimeter, which shows these variations in this physical property of the blood. They conclude that the chief resistance to the flow is due to the viscosity, and occurs

in the capillaries. It has long been a disputed point as to whether the resistance to the arterial flow, and consequently to the heart, is situated in the capillaries or arterioles.

Sir W. H. Broadbent, I believe, even now throws the weight of his deservedly great name in favor of the resistance being in the capillaries; and in cases of vasomotor paralysis no doubt such is the case, but in ordinary circumstances I agree with the majority that there is an earlier barrier to the outflow from the heart in the arterioles and small arteries which are governed by vasomotor nerves. This can be readily proven by the fact that there is very little fall in the pressure-gradient from the large to the small arteries. The pressure in the radial and tibial at the same levels is as great as that in the branchial and femoral. When you come to the very small arteries and arterioles which are offering resistance to the flow there is a very great fall in the pressure and an increased velocity. As I have before said, the fall between the radial and digital artery may be as much as 50 mm. of mercury, and there may be an even greater fall in the pressure-gradient between this and the capillaries. Now, if the capillaries formed the first line of resistance the fall in the pressure-gradient would be much more gradual, and high arterial pressure would be associated with high capillary pressure, but we know the reverse to be the case.

It is extremely fortunate that there is this first line of defence created by the action of the vasomotor nerves in the small arteries and arterioles, because if this were wanting, as at present constituted we should either have to go about on all-fours or constantly run the risk of fatal syncope. Moreover, the blood would gravitate into the most dependent parts, the cooling surface would be enormous, the capillary velocity would be diminished, the blood would become surcharged with  $\text{CO}_2$ , and we would become cold-blooded animals. When the vasomotor nerves of a rabbit are paralyzed it appears all right until you suspend it by the ears, and then it immediately dies. The arteriolar resistance saves us from such risks.

In cases of vasomotor paralysis the arteriolar resistance to the cardiac outflow is transferred to the capillaries, and then the fall in the pressure-gradient becomes more gradual. In a case of Landry's paralysis I have seen within half an hour of death the diastolic pressure 146 mm. of Hg, and the systolic 190 mm. of Hg in the branchial artery at the heart level, and when the arm was raised 220 mm. the diastolic pressure fell to 130 mm. and the systolic to 174 mm. of mercury. The capillary velocity in the hand at heart level was 0.83 mm. in the second. The hand was perfectly livid, but when it was lowered over the edge of the bed 650 mm. the velocity increased to 1.67 mm. in the second, and the color improved; thus proving that the resistance

was not a question of viscosity, but gradual failure in the driving power to overcome the total resistance. The venous pressure was low as well as the capillary, showing that the heart was rapidly failing (though doing its utmost) and had not sufficient energy to overcome the capillary resistance. By this wonderful vaso-motor mechanism a large amount of the cardiac energy is stored up in the arteries as potential, and is converted into kinetic energy in the arterioles and capillaries.

In the second line of resistance there is a greater transformation of energy. If there be very little resistance in the veins a large proportion of the kinetic energy is carried right through to them, but as far as the resistance to the outflow has to be overcome the velocity is converted into pressure. There is considerable waste or rather transformation of energy in overcoming resistance and in producing filtration pressure. In these small tubes there is an enormous amount of surface friction. The resistance is directly as the length of the tube and inversely as the square of the sectional area; directly as the square of the velocity and inversely as the fourth power of the diameter. It also varies directly as the viscosity. The extravascular pressure is about one-fourth of the capillary pressure from which it is derived and is an important force in carrying on the lymph circulation.

The viscosity is an important element in the resistance; we have already seen how it is increased by  $\text{CO}_2$ , and diminished by heat. The work of Professor A. E. Wright has shown that it is increased by the salts of calcium, magnesium, and strontium, and diminished by decalcifying agents such as citric acid and the salts of potassium, ammonium, and sodium.

We have already referred to the viscosity in connection with the resistance in the tubes or the surface friction, but the mobility of the fluid or the surface friction of the molecules of the fluid against one another increases the resistance. The force of the heart is used up in propelling on the blood, and of course the mere weight of the blood and the viscosity must use up a great part of this force. The blood is a very viscous fluid and its viscosity is much increased by an excess of corpuscles.

Dr. John H. Watson and Dr. Denning found that the viscosity is much diminished by a rise of temperature; and that an increase in the corpuscles invariably causes an increase in the viscosity, and in the tubes of small bore this increase produces a most definite rise in the internal resistance, increasing more and more markedly as the diameter diminishes.

My former house-physician, Dr. R. J. Ewart, who has done some excellent work on the viscosity of the blood, has shown that here the law of Poiseuille does not hold good in tubes of very small diameter, because the increase is much greater than the inverse ratio of the fourth power of the diameter.

Drs. Watson and Denning have shown that, "With a given number of corpuscles present in the blood, the rate of flow through any particular tube down to 0.3 mm. in diameter may be considered directly proportional to the pressure. A given increase of pressure exerts a much greater accelerating effect on the rate of flow through tubes of fine calibre than through tubes of wide bore." This corroborates my own observations on the effects of arterial pressure on capillary velocity.

Burton-Opitz, quoted by Watson, has found the viscosity increased by nitrogenous diet and by alcohol. Watson has found the viscosity diminished in chlorosis, but this must be more than counterbalanced by the great increase in the plasma and the total increase in the corpuscles, which Lorrain Smith has shown to exist in this disease. The viscosity is diminished, but the total weight of the fluid to be driven is enormously increased, consequently the heart hypertrophies.

In polycythaemia, as Professor Osler has said, "It is especially important to test the viscosity of the blood by accurate physical methods, and to determine the relation of the number of corpuscles to the viscosity." This has been done by Watson and by Parkes Weber, and they have found that viscosity may be more than doubled, and is in direct proportion to the number of corpuscles.

Burton-Opitz, Fano and Rossi found that thyroid secretion lessens the viscosity. Watson concludes his observations in the statement: "The influence, therefore, of the viscosity of the blood is not an independent but a dependent variable whereby its effect upon the work of the heart may be diminished or increased."

There can be no doubt that the viscosity is an important element in determining the work of the heart; but, as a clinical factor, its importance can be easily overrated, as there are other simpler methods of determining the condition of the capillary circulation, and we must remember that the living capillaries are more or less elastic, and offer much less resistance to the flow of blood than would be caused by rigid tubes of the same calibre. On the other hand, the great variableness of the capillary pressure and velocity makes their interpretation often a matter of some difficulty.

#### THE INTERCHANGE OF MATERIAL THROUGH THE CAPILLARY WALLS.

There are some physiologists who would raise the endothelial cells of the capillary walls to the high level of secreting structures, not that they have any evidence, either from analogy or otherwise, in support of such a contention, but simply because they think that the physical properties of diffusion, osmosis, and filtration cannot account for the phenomena. They hold that the capillary pressure is low, and is more than counterbalanced by

the endosmotic equivalent of the albumen and salts in the blood. When they recognize the enormous variation which takes place in the pressure and velocity of the blood in the capillaries, they will have less difficulty in admitting the problem of filtration as applicable to the capillary circulation. Moreover, the capillary walls do not form a semi-permeable membrane, but are just as easily permeated, *cæteris paribus*, in one direction as in the other. In a network of capillaries the pressure must necessarily be higher in the efferent or distributing vessels connected with the arterioles than it is in the afferent or collecting tubules which unite to form the venules. You can thus have filtration and absorption going on side by side, just as in a hole in the wall divided by a midriff you can have strong currents of air flowing side by side in opposite directions. The fall in the pressure-gradient in the capillaries must be fairly uniform from arteriole to venule; but as there is usually a considerable fall from the capillaries to the veins there must be a corresponding difference between the efferent and afferent capillaries, and thus transudation and absorption in different parts of the same network can be readily explained. In the intestinal capillaries the larger and deeper vessels supply the secretory structures, and the smaller and more superficial vessels are the absorbents.

The interchange of gases which are in solution readily takes place by the process of diffusion; and osmosis must play a very important part in transudation and absorption according as the osmotic equivalent is greater on one side than the other of the capillary membrane. In 1886, when dealing with the pathology of dropsy, I said: "Fluids pass very readily through organic membranes, such as the walls of the capillaries, by a process of osmosis, but albumens do not thus readily transude. Unlike the capillaries at the lungs and kidneys, the systemic capillaries allow albumen to pass through their walls, so that it is found in all the intercellular fluids. Now, if it does not pass through by osmosis, we must suppose it to be filtered through under varying amounts of pressure. In filtering under pressure, as a rule, the greater the pressure the greater the amount of the filtrate, but the composition of the latter differs very materially from the nature of the compound fluid submitted to the pressure, as the different constituents pass through with varying degrees of ease, the water passing through much more readily than the albumen. Hence, although the total amount of albumen passed through may be increased according to the quantity of the filtrate, its percentage is diminished. Hence, the greater and more rapid the production of dropsy—if there be no increase in absorption—the less the relative amount of albumen." Runeberg in 1882 expressed similar views when he maintained that the concentration of a colloid filtrate is greater at lower than at higher pressures.

Time will not permit me to wander into this attractive by-path, but I wish you not to allow any advanced physiologist to allure you from the paths of truth. By all means prove all things, but hold fast to that which is good. On this score you cannot do better than adhere to the teaching of Professor Starling who says: "In fact, we may say that the formation of lymph and its composition, apart from the changes brought about by diffusion and osmosis between it and the tissues it bathes, depend entirely on two factors: (1) The permeability of the vessel wall; (2) the intracapillary blood pressure. So far as our experimental data go, we have not sufficient evidence to conclude that the endothelial cells of the capillary walls take an active part in the formation of lymph. It seems rather that the vital activities of these cells are devoted entirely to maintaining their integrity as a filtering membrane, differing in permeability according to the region of the body in which they are situated. Any injury, whether from within or without, leads to a failure of this their one function, and therefore to an increased permeability, with the production of an increased flow of a more concentrated lymph."

We shall now briefly glance at the capillaries and their functions in some of the principal regions of the body. In order to avoid repetition, I shall here include the minute arteries and arterioles which regulate the supply of blood to the capillaries. These little vessels are anatomically composed of three coats, but according to the function which they have to perform they vary very much in the thickness of the middle coat and in the supply of vasomotor nerves.

#### THE ARTERIOLES AND CAPILLARIES OF THE SKIN.

The arterioles are well endowed with muscular fibre and vasomotor nerves, chiefly of the constrictor type; frequently they are so contracted that the capillaries are almost empty, and in cases of local syncope quite empty, and the pressure and velocity fall to zero. When the vasomotor nerves are paralysed from a central cause the capillaries are full, their pressure increased, and the velocity diminished. When paralysed from a local cause—such as a mustard poultice—the capillaries are engorged and the pressure and velocity increased. Witness also the effects following the application and removal of an Esmarch's tourniquet. These little vessels are reciprocal to those of the splanchnic area, are largely concerned in regulating the temperature of the body and in maintaining the general arterial pressure.

The capillaries form an exceedingly close network in the corium and send loops up into the papillae. The pressure and velocity vary enormously. After a liberal meal—especially one containing ingredients which dilate the arterioles, raise the diastolic

arterial pressure, and thus provide an abundant supply of blood to, with increased pressures in, the capillaries—there is a free outpouring of lymph. In my opinion, a good deal of the work which has been done on the so-called digestion leucocytosis has been rendered worthless by the work of George Oliver on the tissue-lymph circulation. These observations were made on blood obtained from a prick of the finger, and this consists of a mixture of blood and lymph. The white cells are increased—the increase being in the lymphocytes—in proportion to the dilution with lymph and the red cells are proportionately diminished. If the lymph be compressed out of the tissues and then a drop of pure capillary blood be obtained, there will be found in it an increase of red cells, and the white cells will be much less than in the mixed blood and scarcely any more than would be obtained by an ordinary puncture two or three hours later when the lymph has been reabsorbed. This so-called digestion leucocytosis is therefore no evidence of any increase of white corpuscles in the circulating blood, but merely that lymph has been pressed out from the vessels, and in this lymph there is a considerable number of lymphocytes, probably obtained from the tissues rather than from the capillaries. There is no doubt a digestion leucocytosis, but it is not what has been described.

#### THE ARTERIOLES AND CAPILLARIES OF THE SPLANCHNIC AREA.

These arterioles are very muscular and well supplied with vasomotor nerves. These nerves are the chief regulators of the arterial blood pressure. The capillaries are very fine and form an extremely close network. The resistance to the outflow is very slight, except in cases of portal obstruction, hence the velocity is usually great and the lateral pressure slight. This is just what would be expected in vessels where absorption is an even more important function than secretion. Those capillaries which are given off earlier are the largest, and go to supply the secreting structures of the glands, while those which approach the surface of the mucous membrane are much finer, consequently the velocity in them is much greater and the lateral pressure less. This is where absorption takes place.

#### THE CAPILLARIES OF THE LIVER.

The capillaries of the liver are short and wide, measuring 0.5 to 1 mm. in length and about 10 to 13 micromillimetres in diameter. The velocity is often so slow that the liver is of a dull purple color, and the pressure is relatively but not absolutely high. The liver capillaries are very permeable, and, as has been shown by Professor Starling, give rise to a free secretion of concentrated lymph. This is in accordance with the observations of

Runeberg and of myself that the concentration of the filtrate is greater at lower than at higher pressure. Professor Starling has also shown that the lymph is also increased by any obstruction to the outflow from the hepatic veins. In the large nutmeg livers, induced by positive intrathoracic pressure and regurgitation through the tricuspid orifice, the capillary pressure is increased and the velocity diminished. In the early stages of hepatic cirrhosis, while there is an increased exudation and fibrosis along the portal vessels there is also marked congestion of the central lobules due to cardiac asthenia, dilatation of the tricuspid orifice, and increased venous pressure, the results of chronic alcoholic intoxication. At this period the liver is enlarged from hepatic congestion, and it is only later that the contraction of the newly-formed fibrous tissue leads to diminution in bulk. The liver acts as a reservoir for the right side of the heart.

*(To be continued.)*



## RACE SUICIDE AND CHRISTIAN SCIENCE.

BY JAMES H. RICHARDSON, M.D. TORONTO.

I HAVE no doubt that many, if not most, readers of this journal may be impatient at the mere mention of Christian Science, and I would not ask for any space if it was not for the extreme importance of Mrs. Eddy's teachings, as to marriage, procreation, and marital relations, which can only be discussed in a medical journal.

Mrs. Eddy, on the occasion of the opening of the New Church, in Boston, sent a message to the assembled thousands, which needs no notice, except for these words:

*"Marriage, synonymous with legalized lust, and the offspring of sense the murderers of their brothers."*

In case any one should hesitate to believe that this was more than thoughtless verbiage, and that Mrs. Eddy meant exactly what she said, it is necessary to show that this is one of the fundamental doctrines of Christian Science, enunciated, and repeatedly insisted upon, throughout *Science and Health*, and in her other works.

1. She maintains that the account given in Genesis 4. 1, is "a lie." She quotes:

"And Adam knew his wife, and she conceived, and bore Cain, and said: 'I have gotten a man from the Lord;' and declares: "Eve's declaration supposes God to be the author of *sin, and sins' progeny.*" and, "The scriptures declare that God condemns this lie. This false sense of existence is patricidal. In the words of Jesus, it is a 'Murderer from the beginning.'" In proof Mrs. Eddy quotes Jesus' words: 'I have chosen you twelve, and one of you is a devil,' and adds: "This he said of Judas, *one of Adam's race.*"

2. Throughout *Science and Health* the Adamic race is referred to as being not the children of God, but of the Devil.

3. At the end of *Science and Health* she gives a "glossary," in which she defines as follows:

"Children—Counterfeits of creation."

"Benjamin—A *physical belief* as to life."

"Dan—Animal magnetism."

"Issachar—A mortal belief."

"Jacob—A corporeal mortal."

"Joseph—A corporeal mortal."

"Judah—A corporeal material belief."

"Levi—A corporeal sensual belief."

"Moses—A corporeal mortal belief."

"Neah—A corporeal mortal belief."

"Rheuben—A corporeal mortal belief."

She adduces these as being of the Adamic race, and therefore as "Children of the Devil."

4. Please bear in mind that Mrs. Eddy's contention is that the Adamic race are not God's children, but are *the offspring of lust*, and you will see the significance of the words of her message: "Marriage synonymous with legalized lust."

5. In accordance with this belief in the sinful origin of man Mrs. Eddy looks forward to the time when "The superiority of spiritual power *over sensory*, will usher in the dawn of God's creation, *when they will neither marry nor are given in marriage*.—(Miscellaneous writings, p. 288.)

"Until time matures," however, "human growth, marriage and progeny will continue unprohibited in Christian Science." (Miscellaneous writings, p. 288.)

To abolish marriage, at the present, and maintain morality, and generation, would put ingenuity to ludicrous shifts, *yet this is possible in Christian Science*. "The time cometh, and now is for *Spiritual* and Eternal existence to be recognized in Christian Science." On the same page she proposes the question:

"Is marriage nearer right than celibacy?" and answers: "*Human knowledge inculcates that it is, while science inculcates that it is not.*"

"Human procreation, birth, life, and death are subjective states of the human erring mind. . . . God is the only creator, and we recognize this. . . and shut out all sense of other claims."

"Progress lifts mortals to discern the *Science of Mental formation*." (cit. p. 287.)

6. I have thus tried to lead up to the terrible conclusion to which I call special attention. Bear in mind: Mrs. Eddy teaches that all children born in wedlock, are "the offspring of legalized lust, merely. That the desire and expectation of christian scientists are for spiritual—spiritual, not sensual—*generation*. And then read: "Human nature has bestowed on a wife the right to become a mother, but if the wife esteems not her privilege, by mutual consent, she may reach a higher."

The reader will now perceive the significance of the heading: "Race Suicide and Christian Science." Race suicide enjoined upon christian scientists, *as a duty*; mothers taught that they can "reach a higher nature by foregoing" the privilege of becoming a mother." All children born in wedlock the offspring of legalized lust! 'the children of the Devil!'

Imagine the state of a household in which the wife, believing that her progeny will be the offspring of sin, pleads with her husband to allow her to remain childless. The husband knowing that any marital intercourse with his wife is loathing to her!

is violating her religious aspirations ! a husband consenting to be deprived of children ! what a Hell !

Can anybody doubt the truth of Mr. Peabody's declaration : " I should like to go into a plain consideration of this pernicious phase of Mrs. Eddy's teaching, but it is not possible in anything but a medical work.

" Suffice it to say, that the teachings of this woman have, within my observation, again and again resulted in the most complete demoralization of the married relation, and destructive of all that is sweet and wholesome in married life. In time, according to Mrs. Eddy's teachings, there will be no marriage, and generation will be entirely independent of sex. Man will be a superfluity in the process, and women will conceive through the effort of the will merely. Insane as this teaching is, some thousands of Mrs. Eddy's friends believe it to be the teachings of omniscience, and as such make it the desire of their lives."

Mrs. Eddy resorts to science for confirmation of her insane ideas about generation (on p. 541, *Science and Health*) : " The propagation of their species, by butterfly, bee, and moth, without the customary presence of male companions, is a discovery corroborative of the science of mind : because these discoveries show that the origin and continuance of certain insects rest on a principle, apart from sexual conditions." This quotation is from what professes to be a revelation made, word for word, from God. Is there a single one of her dupes who knows that if it was not that these insects, at the close of summer, produce males and females, and have sexual intercourse the species would inevitably cease to exist ?

Her professed revelation (p. 539) gives another proof in the following words, whose absurdity is phenomenal, even for Mrs. Eddy.

" The late Louis Agassiz, by his microscopic examinations of a vulture's ovum, strengthened the *author's* conclusions as to the scientific theory of creation. He was able to see in the egg the earth's atmosphere, the gathering clouds, the moon and stars, while the germinating speck of embryonic life seemed a small sun " ! !

I could fill page after page with absurdities nearly as equal to this, but refrain. I do not wish to divert the minds of my readers from serious consideration of Mrs. Eddy's teachings as they affect the relation of husband and wife.

We sincerely hope that the " perfect day," longed for by Christian Scientists, will soon arrive, when they have given up the procreation of children by sexual relations, " and shall neither eat to live, nor live to eat." (*Science and Health*, p. 387.)

\* Mr. Peabody is a lawyer of eminence in Boston, Mass., and delivered his lectures in Tremont Temple. He made statements concerning Mrs. Eddy, her character, her frauds, etc. which would subject him to heavy penalties if he did not prove them in a law court, and dared her to prosecute him.

**PENETRATING STAB-WOUNDS OF THE ABDOMEN.**

BY N. A. POWELL, M.D.,

Surgeon, Hospital for Sick Children, and Emergency Hospital; Assistant Surgeon,  
Toronto General Hospital.

In the emergency surgery of every large city cases of this kind occur from time to time, and which ought to be placed on record so as to be available in formulating the best methods of treatment. From a series of such injuries three cases are selected and here presented as possessing certain points of interest.

1. Man aged 24—hostler—returned to his bedroom in a boarding-house at 11 p.m.—found in bed at 7 next morning with much blood on mat at his bedside; both testes had been cut out by means of a dull knife, and an opening made four inches long near the middle line above the umbilicus, through which protruded a mass of omentum and many coils of small intestine. The parts involved were covered by towels wrung out of an extemporized hot saline solution, and the man removed to the General Hospital, where my colleague, Dr. Grasset, was good enough to take over the care of the case.

Excision of the prolapsed omentum, cleansing of the bowel, ligating of vessels and closing of wounds without drainage was followed by a satisfactory recovery. This man was suffering from melancholia, and we subsequently had him removed to an asylum.

2. Man, aged 27, found by police near Stanley Park at 11 p.m., with both hands clasped above his left groin and holding up against a very dirty vest and shirt a quart or more of omentum and of large and small intestine, extruded from a stab-wound six inches long, which crossed the descending colon obliquely from above downwards and inwards. The bowels were wounded in a number of places, but extravasation of its contents was fortunately limited.

At the Emergency Hospital I wrapped the prolapsed viscera in hot towels wrung out of saline solution while the cleaning-up process was being carried out, and then, under anesthesia, excised the soiled omentum, sutured the bowel, and spent much time in making the toilette of the peritoneum. A stream of salt solution was kept constantly flowing over the parts to avoid their drying. So many bowel injuries were found that this man was practically eviscerated on hot towels before it was thought safe to close his wound. No drainage was employed, and the convalescence was uneventful. No history of how the wound was received could be obtained.

3. Woman, aged 50, melancholic, brought into Emergency Hospital with a mass of omentum as large as a fist protruding from a self-inflicted cut in the region of the umbilicus.

The wound area was protected as in the last case, and rapid preparation made for celiotomy. Upon enlarging the abdominal incisions they were found to lead into an umbilical hernia, containing incarcerated omentum, but no bowel. This had been cut up pretty extensively by the knife, which fortunately was not a sharp one. The adhesions all around were freed and the omentum ligated off in sections and removed. It only remained then to overlap the fascia and do an ordinary operation for the radical cure of the hernia. A smooth recovery is now taking place.

Commenting on these cases, it has seemed safer to the writer to remove infected omentum, rather than to trust to cleansing and replacing it. Fat, being a lowly organized tissue, has little resistance to infection. Most of us have had unpleasant proof of this when too large a size of catgut has been buried in a fat abdominal wall, or when we have included the fatty layer and tied a suture of any material too tightly. The avoidance of the drying or the chilling of bowel during the necessary exposure, the prevention of all traction on the mesentery (which would so notably increase the shock), as also rapid accuracy of manipulation on the part of the surgeon, would seem to be factors to which attention may fairly be directed.

In conclusion, if we are to disprove the Texan aphorism, "When a man gets a cut gut, he sure dies," we must overlook no lesion of bowel, and this means that we must pass in review every portion of it, from the diaphragm to the pelvic floor.

## ABSTRACTS.

**Hygiene in Prussian Army.**—Werner (*Deutsche medizinische Wochenschrift*, Berlin and Leipsic) describes the progress of hygiene in the army and the reduction of morbidity. Comparing the year 1873 with that of 1902, the statistics show that nearly 2,500,000 days of treatment of the sick were saved, and 2,462 lives. In 1873 an average of 31.9 out of every 1,000 men were sick, while in 1902 the average was only 25.3. The morbidity of typhoid in 1902-3 was .85 in each 1,000 soldiers; in France it was 4.3; in Austria, 1.9, and in Italy, 4.1. The mortality from typhoid during the same period was .09 in Prussia, Saxony and Wurttemberg; .59 in France; .25 in Austria, and .78 in Italy. The average of venereal diseases during this period was 19.4 in Prussia, Saxony and Wurttemberg; 29.3 in France; 57.5 in Austria; 91.5 in Italy, and 122.7 in England. The venereal diseases have diminished in the Prussian army by 49 per cent. since 1873, and syphilis by 59 per cent.

**Generalized Cancerous Lymphangitis of the Lungs.**—In the two cases described by L. Bard (*Semaine Médicale*, Paris) the condition was a surprise when discovered post-mortem. In retrospectively reviewing the cases, however, he noted certain points which might suggest the diagnosis when encountered again. The anatomy of the parts allows the isolated and almost simultaneous generalization of the process throughout the lymphatic system in the lungs in a way impossible in other organs. Two of the few cases of the condition on record were reported as cases of suppurative lymphangitis, the mistake not being discovered until afterward (Raynaud and Troisier). Rapidly progressive, intense dyspnea, without explanatory auscultation findings, in a patient presenting evidence suspicious of a cancerous or ulcerative lesion in the stomach, should always suggest the possibility of the condition under discussion. In some cases a concomitant bronchitis masked the specific symptoms. The condition seems to occur mostly in the early stages of cancer. The rapid diffusion is characteristic of cancer in the young. All the cases on record were in comparatively young persons, between the ages of 20 and 35, all males. Bard long ago pointed out that in young subjects cancer seems to have a peculiarly rapid growth with unforeseen complications. It is possible, he adds in conclusion, that the cases described as "galloping cancer" of the lungs or "galloping consumption," may have included some in which the trouble was this generalized lymphangitis secondary to an unsuspected cancer elsewhere.

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## Editorials.

### THE TREATMENT OF HEMIPLEGIA.

PATIENTS predisposed to apoplexy should lead a quiet life, free from physical and mental excitement. Their diet should be nutritious, but easily digestible; constipation should be relieved by the occasional use of a saline laxative or an enema. When a patient has been attacked with hemiplegia he should be placed in bed with his head moderately elevated and the neck free; an ice-bag

may be placed on the head, hot bottles to the feet; brisk catharsis may also be sought for. Catheterization of the bladder may be necessary if the patient remains long unconscious.

In the sixth edition of his work on "The Principles and Practice of Medicine," Dr. Osler says of the after treatment of hemiplegia: "During recovery the patient should be kept entirely at rest, even the mildest cases remaining in bed for at least fourteen days. The ice-bag should still be kept at his head. The diet should be light, and no medicine should be administered at least during the first month after the hemorrhage. Attention should be paid to the position occupied by the paralyzed limb or limbs, which, if swollen may be wrapped in cotton batting or flannel." Should syphilis be suspected to be the cause of the attack, the iodide of potassium should be used, giving from 20 to 30 grains three times a day or, if necessary, larger doses. If the syphilis has been recent, mercurials by inunction are also indicated.

In reference to the subsequent treatment of hemiplegia, Dr. Osler also writes: "The paralyzed limbs may be gently rubbed once or twice a day, and this should be systematically carried out, in order to maintain the nutrition of the muscles and to prevent, if possible, contractures. The massage should not, however, be begun *until at least ten days* after the attack."

Though no reason is given for this caution, Dr. Osler probably intends to convey the idea that early movements of the hemiplegic patient's body might cause a reappearance of the hemorrhage from the ruptured vessel in the brain.

In a paper entitled "How to Treat Hemiplegia," read in the department of Therapeutics and Pharmacology of the International Medical Congress, Lisbon, April 21-26, 1906, Dr. Maurice Faure describes a symptomatic treatment of hemiplegia, which is said to be both active and efficacious. He says: "As soon as the diagnosis of hemiplegia is declared, *immediately and without* losing twenty-four hours, all the patient's joints should be moved minutely for a long time and several times a day, and the muscles should be massaged." He claims that by moving of the patient's joints, and massage, will prevent antritis of the shoulder joint, which appears during the first day succeeding an attack of hemiplegia. All the other antritis which soon follow, the reflex muscular atrophies, which rapidly develop in the neighborhood of



the antrites, the pains resulting from the antrites, myosites, neurites, the contractures caused by the pain, and finally the vicious attitudes and the irreparable retractions which result from atrophies, contractures and immobility would thus be prevented in a large degree by the employment of passive, methodical and progressive movements.

When the patient's mental faculties have been restored and brain fatigue does not come on rapidly, he should receive a methodical re-education in voluntary movements, at first elementary, afterwards more complicated, the teacher reducing to a minimum the expenditure of muscular force, and as far as possible the effort of attention on the part of the patient. According to Dr. Faure this treatment preserves the suppleness of the paralyzed members, the strength and volume of the muscles, thus assisting in the restoration of voluntary movements. Voluntary movements generally reappear slowly in a paralyzed upper extremity, the normal movements of which are more difficult, more numerous and more highly differentiated than those of the lower extremity.

Dr. Faure says that the results obtained in practice justify the opinion that many of the motor disorders occurring after hemiplegia, which are commonly ascribed to the fatal evolution of a cerebral lesion, are really avoidable complications of paralysis. The pathogenesis of the antrites, atrophies and contractures occurring in badly treated cases of hemiplegia may thus be prevented.

Respiratory and digestive disorders, due to the hemiparesis of the muscles of the thorax and abdomen, are regularly observed in hemiplegic patients. Special exercises are indicated to overcome pulmonary congestion, fecal stasis and the infections resulting therefrom. Without depreciating the advantages derivable from an observance of the rules of hygiene, together with local and general medication, Dr. Faure teaches that methodical exercises begun early in the treatment of hemiplegic patients will contribute to the maintenance of their general health.

When a hemiplegic patient does not receive the treatment indicated by Dr. Faure in good time, and the exercises are only begun after the establishment of contractures, stiffness, atrophies or vicious attitudes, the results of treatment are mediocre and call for considerable time and the exhibition of much patience on the part of the medical attendant.

Respecting electro-therapeutic treatment, Dr. Faure says, that it may be used as a useful adjuvant in remedying certain muscular atrophies localized in relaxed muscles ; but he does not favor the general employment of this agent to the paralyzed side of a hemiplegic patient, as is too often done in the routine treatment of such cases.

J. J. C.

### THE NATURE AND TREATMENT OF HYSTERIA.

PROFESSOR BABINSKI, Paris, proposes to substitute the word pithiatism for hysteria, and the corresponding adjective pithiatic for hysterical. The Greek word *πειθω* signifies persuasion, and *ιατος* signifies curable, so that these newly coined words designate a psychic state manifesting itself by disorders curable through persuasion. He briefly laid down during his conference the different concepts of hysteria, which have obtained in medicine. He discussed the stigmata of hysteria, showing that they are not permanent, are not developed without the patient's knowledge, and that their value is not as great as has been supposed. One of the fundamental characters of hysteria, he thought, is its capacity for being produced by suggestion ; its second character is its readiness to disappear through persuasion. He therefore proposes to place the word pithiatism above the nosological group in which hysterical disorders are classed. He likewise showed that hysteria cannot simulate all forms of disease. Cases of edema, phlyctene, anuria, hemoptysis, hematuria, and hysterical fever have been ascribed to hysteria, but, in his opinion, incorrectly so. In discussing hypnotism, he held that a person may be said to be hypnotized when, after the performance of certain passes, paralyses, contractures, or anesthetics are observed to occur. Hysteria and hypnotism are intimately related to each other. He proposes to give the following definition of hysteria : Hysteria is a psychic condition, rendering the person affected by it capable of acting on herself, through auto-suggestion. It manifests itself principally through primary disorders and through secondary disorders acting in an accessory way. The characteristic of the primary disorders is that they can be reproduced by suggestion with the greatest exactness in certain persons, and that they can be made to disappear

exclusively under the influence of persuasion. The characteristic of the secondary disorders is their close subordination to the primary ones.

Professor Babinski defines hypnotism as follows : A psychic condition, rendering the person affected by it susceptible to the suggestion of another person, manifesting itself by phenomena, which suggestion originates, which persuasion removes, and which are identical with hysterical disorders.

The above definition would, if accepted, lengthen the list of persons afflicted with hysteria. In fact, any person of either sex who is credulous enough to be easily influenced by suggestions emanating from another person is hypnotizable. Such a person might be attacked by a disease through the suggestions of another, or through auto-suggestion, and the suggested disease could be removed by persuasion. The treatment of hysterical disease, which, according to Babinski, is identical with the phenomena of hypnotism, consists in persuasion.

Christian Science is a system of therapeutics founded on persuasion, and a good many of its followers are hypnotizable persons. These two circumstances explain the rapid growth of this new religion. Perfect health in man or woman is rare ; few escape the blighting influence of neurasthenia. A hypnotizable person may suggest to himself that he has a disease, the phenomena of which he may have studied ; medical students will understand this form of auto-suggestion. To others the suggestion of disease comes through advertisements, in which the symptoms of a disease are described with great exactness, a patent medicine being recommended as a cure. The element, persuasion can invest even bread pills with curative powers. If potent drugs—morphine, cocaine, alcohol—are used by the pithiatic patient, much harm may result. Disgusted at failure to obtain relief from an imaginary disorder by the use of potent drugs, the hypnotized one may suggest suicide to himself, or, possibly, may be persuaded to join the Christian Scientists. In the latter event, he does obtain relief, for his disorder is not founded on a pathological lesion, and yields to the influence of a faith, which cures functional disease by persuading the patient that it does not exist. It may have been a dyspepsia, founded on irregular habits of eating, aggravated by mental distress or by bad hygiene. Again, the dyspepsia of adult

life, which to the sufferer and his friends indicates organic mischief, fades away of itself as middle age is reached, when the struggle for wealth or fame is less arduous, when the nerve centres are less severely tried than they were during the earlier period of adult life. Incorrectly viewed, relief from dyspepsia is often misunderstood, and what is due to a better functioning of the nerve centres arising from the persuasion that all is well, may be ascribed to a supernatural influence—the influence of religious practices. Prayer, singing, invocation is also calculated to powerfully affect the heart and the imagination. At the therapeutic seances of Christian Science, special prominence is given to reading passages from Holy Writ relating to miraculous cures, and this persuasive point is driven home—what has been done to others in the days of Christ and his apostles may also be done to ourselves at the present day. Animated by such language, persuaded by the contagious behaviour of associates, dyspeptic or neurasthenic persons are cured of their suggested or self-suggested complaints by the persuasion, that they do not exist.

Although not responsible for the private good or general benefit accruing from the operation of State hygiene, Christian Science reaps an unearned harvest from the enforcement of hygienic laws. Typhus fever, typhoid fever, diphtheria, smallpox, cholera, which, in endemic or epidemic form, used to sweep away great numbers of people, only a few years ago, are now powerfully restrained. Preventable diseases, not of the imaginary kind, however, are prevented, but not by Christian Science; *non tali auxilio*.

The influence of this persuasive religious cult makes inroads on the income of the physician; the more fortunate surgeon is exposed to less financial loss. Abandoned by the populace for advertised drugs or some persuasive faith cure, importuned at times by shameless clients to take human life, rather than to save it, the physician must be wary if he would not be driven to the wall. Bound as he is by an iron code of medical ethics, he must struggle with pithiatists of different denominations who are restrained by no professional obligation, who merely seek their private gain or the gratification of their whims. The path of the general practitioner of Ontario to-day is a thorny one, relieved here and there by the wild flowers that grow by the wayside, and here is a spray of live-for-ever plucked from the waste of weeds and thistles he

walks through. In treating suggested or self-suggested disorders let him avoid the use of potent medicines, and pin his faith to placebos and persuasion.

J. J. G.

**THE REPORT OF THE REGISTRAR GENERAL OF ONTARIO  
FOR 1904.—TUBERCULOSIS IN ONTARIO.**

THE report of the Registrar-General of Ontario for 1904 contains, among other interesting matters, some references to the causes which increase the mortality from tuberculosis in this province. These are said to be chiefly: urban life, proximity of certain counties to the River St. Lawrence and the present lax medical examination of the immigration department of the Dominion Government, by which tubercular persons of foreign birth become victims of tuberculosis, from which they have suffered before leaving Europe. The evils of urban life admit of amelioration: proximity to the St. Lawrence may be robbed of ill effect through drainage of the soil; negligent inspectors are removable.

The following table shows deaths from tuberculosis in Ontario through the decade 1895-1904:

Year	Pop. of Ontario	No. of Deaths from Tuberculosis	Rate per 100,000 of Pop.
1895	2,211,101	2,472	1.11
1896	2,263,492	2,922	1.29
1897	2,257,378	3,164	1.35
1898	2,279,929	3,291	1.44
1899	2,302,705	3,405	1.41
1900	2,325,712	3,484	1.49
1901	2,184,144	3,284	1.50
1902	2,205,965	2,694	1.22
1903	2,198,692	2,723	1.23
1904	2,203,968	2,877	1.30
Total . . . .	22,433,086	30,316	1.30

Thus, with slight variations in the population of this province during the past decade, although the balance is now against us instead of in our favor, it will be seen, that the proportion of deaths from tuberculosis does not vary very much from year to year. Taking the aggregate population of the last decade, and the total deaths from tuberculosis in this province, during the same period the rate is 1.30 per 100,000 of population. Not a bad showing for a population of which 22.5 per cent. were residing in 14 cities in 1904.

The report shows that the mortality from tuberculosis was greatest in Toronto, Hamilton and Ottawa, the largest cities of this province. However, this higher rate in the cities was probably influenced by the presence in them in 1904 of institutions, such as hospitals, almshouses, orphanages, refuges for aged and infirm people, and in Toronto and Hamilton respectively an asylum for the insane. Many inmates of these institutions coming from cities, country places or villages, most probably had tuberculosis in a latent form on admission, the subsequent fatal termination not being fairly attributable to the circumstances of institutional life, nor to urban life either.

An important source of error in attributing the large mortality from tuberculosis in the cities to remediable conditions of civic life is, that tubercular patients, often after the lapse of many years, return to their old homes only to die, their deaths being registered in the cities instead of the places where the disease had its origin, or where the conditions were such as to favor susceptibility.

On the other hand, the death rate from tuberculosis in Muskoka, viz., 155 per one hundred thousand of population, would indicate that deaths occur there of persons suffering from tuberculosis, who sought that healthful part of the province with the hope of being benefited in their health, but who succumbed to the disease before being able to return home.

Aside from the debatable causation of tuberculosis through infected meat, butter and milk, there is an agency which has long been considered operative in the production of this disease and to which attention is drawn in the report.

Dampness of the soil is considered a cause owing to the fact that residence on a soil in which the ground water is at least five feet from the surface is said to cause debility and a tendency to respiratory disorders.

If this observation were applicable to all kinds of soil Toronto Island would not be selected as a health resort, particularly by people who wish to escape the attacks of tuberculosis, not to speak of rheumatism and neuralgia. There are, however, it must be understood, compensatory advantages at Toronto Island—pure air and strong sunshine—agencies which destroy the vitality of the bacilli tuberculosis. It may also be, that some importance should be attached to the quality of the soil. We are not prepared to dis-

ness the matter here; but it does not seem reasonable to attach the same importance to dampness in a sandy soil and to dampness in an undrained clay soil. However, the report says: "Of the old settled counties, Waterloo has the low rate of 67; Norfolk, 71; Dufferin, 75; Haldimand, 79, while the counties with a high rate are found to be those bordering on the River St. Lawrence—Leeds and Grenville, 193; Stormont, Dundas and Glengarry, 213."

Dampness in the dwellings cannot be a direct cause of tuberculosis; but the inference from the view in the report would favor the opinion that residence in a damp dwelling is a cause of debility, which increases susceptibility to that disease. The really interesting point to discover is why residences in counties bordering on the River St. Lawrence are damp, and the important thing to do is to prevent this dampness in the dwellings if possible.

There is a consensus of medical opinion that a crowded condition of dwellings is a cause of tuberculosis—principally because of the fact that persons suffering from it are brought into contact with others to whom the disease is communicated through the expectoration. Many halls, churches, schools, theatres, factories and workshops in Ontario are overcrowded and they will be overcrowded until regulations providing for the ventilation of public buildings, similar to those in force in Massachusetts are adopted and enforced in Ontario.

The official inspection of dwellings is also called for, in view of the crowded state of the dwellings inhabited by the working classes of Toronto. Rents have advanced in price and the "doubling up" process has been resorted to freely, especially by the foreign-born population. The establishment of tenement houses will not remove the evils of overcrowding, unless strict regulations are made and enforced providing for a minimum cubic air space per capita in these houses.

As an instance of the bad effects of overcrowding, "It is said that in the British Navy between 1883 and 1890 diseases of the lungs increased 60 per cent. It had been supposed that the doing away with masts, sails and rigging with the consequent lessened exposure of the men to cold and wet, would have a contrary effect; but the influence of these agencies has been more than counterbalanced by the change in conditions below, the men living now in a very crowded condition in hot steel ships." (*Practical Hygiene*, Harrington, p. 622.)

Overcrowding and deficient ventilation are also operative in the production of tuberculosis in large standing armies, tuberculosis finding the greater number of its victims among those who are most confined. Hence it is more frequent in the garrisons of large towns than among the troops in the less thickly settled parts. Army surgeons find, that the most careful prophylaxis is demanded to prevent its spread and the ideal measures employed include the discharge of all persons capable of acting as foci of the disease.

These observations, by medical men, on the spread of tuberculosis in navies and armies fit in with and explain the portable nature of the infection of that disease and the radical methods which must be adopted, if it is to be kept within moderate bounds. Optimistic views as to the possibility of totally removing tuberculosis from the list of diseases, though well-meaning, are baseless. The principal methods of prevention are: Isolation of the phthisical, the universal reign of hygiene, especially in the homes, good food, and, last, but not means least, timely medical advice.

J. J. C.

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#### EDITORIAL NOTES.

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**The Employment of Arsenic in the Treatment of Whooping Cough.**—In *La Presse Médicale*, 18 Aout, 1906, Dr. Jacques de Nittis writes of his experience with arsenic in the treatment of whooping cough. He acknowledges that the use of arsenic in this disease is empirical—but he refers to the success obtained from arsenical medication in asthma and chorea. To the latter disease whooping cough bears a certain relation, owing to the spasmodic character of its attack. Evidently there is no scientific reason for affirming a priori the efficaciousness of arsenic in whooping cough, simply on account of some resemblance it bears to the diseases mentioned; the most that can be said is that the success attained in these diseases holds out some encouragement to the clinician to persevere. Dr. de Nittis treated a dozen cases of pertussis last spring with Fowler's solution of arsenic; his experiments were interrupted at the beginning of the month of May by the extinction of the epidemic. The results obtained were so encouraging, that he places arsenic at the head of the list of medicines to be employed in the treatment of whooping cough. He used large doses of the drug, a child five years old getting one drop of Fowler's



solution of arsenic after breakfast, two drops after dinner and two drops after supper. After a week's treatment slight puffing of the patient's face may be observed, when the administration of Fowler's solution should be suspended. This puffing of the face is said to have no symptomatic value and albumen does not appear in the patient's urine. No sign showing intolerance is observed, so that the treatment may be speedily resumed and should be kept up for two weeks. Treated in this way, Dr. de Nittis claims the disease runs an exceptionally mild course. The spasmodic element is profoundly attenuated, the number of whoops diminishes and the general tenor of the disease ceases to be characteristic of whooping cough. The real nature of whooping cough is not suppressed by arsenical medication. Dr. de Nittis thinks that this fact is brought out in the case of one of his patients. She ceased coughing March 6th, 1906; but continued to have the infection in her system, for, on March 22nd, when she took cold her cough resumed the distinctive character of pertussis. In addition to attenuating to an extreme degree the exhausting cough of whooping cough, which in itself constitutes a danger, arsenic acts as a tonic to the debilitated patient. Dr. de Nittis also claims to have isolated the microbes of whooping cough, incapsulated cocci, sometimes in the form of diplococci, or short little chains, even in lumps in the culture, not taking the gram stain, yielding on solid gelatine culture beds transparent blue colonies, which cause the appearance of broncho-pneumonia when they are injected into young animals.

#### **Treatment of Whooping Cough by the Use of Chloroform.—**

Dr. Henri de Rothschild has employed chloroform in the treatment of whooping cough (*La Presse Médicale* 15 Aout, 1906). Anaesthesia is effected by the aid of the oxygen apparatus of Dr. Guglielminetti. Narcosis is not complete, muscular relaxation sufficient and the abolition of the corneal reflex is not required—narcosis lasts from five to ten minutes. He thinks that it is an extremely useful therapeutic method of treating whooping cough, because if it does not always cure instantaneously, still it rapidly attenuates the symptoms of whooping cough, reducing them to a minimum. The suppression of vomiting, the restoration of appetite and regular sleep give these little patients a chance to recover their strength and to escape from becoming culture beds for the

evolution of the bacilli tuberculosis. Dr. de Rothschild is not satisfied with regarding the mode of action of chloroform in the treatment of whooping cough as sedative or anti-spasmodic. The violent cough of pertussis is, indeed, a reflex cough, starting from an interarytenoid, nasal or tonsillar region. The excitation proceeding from these regions reaches the nuclei of the medulla oblongata, which are themselves in a state of permanent hyper-excitability, on account of their saturation with the toxins of microbes elaborated in the respiratory passages, and these nuclei, in turn, determine spasmodic and convulsive movements of the respiratory muscles. Dr. de Rothschild thinks that the sedative action of chloroform on the nuclei of the medulla oblongata explains the happy effects of chloroform in arresting the violent cough of whooping cough, its duration and intensity. The vapors of chloroform in impregnating these nuclei ought to neutralize the poisons of microbes. One may besides appeal to the total suppression of the peripheral excitation, which the exaggerated reflex of the attack of coughing provokes. Experience shows, that, in neuralgic affections proceeding from a spasmodic reaction, it often suffices to stop the irritation which serves as a point of departure, in order that all the phenomena of neuralgia may be completely arrested. In hay asthma, it suffices to find the point of departure of the reflex of sneezing and of the irritation of the respiratory mucous membrane and to destroy it by the cautery, in order to definitively stop the reaction. Similarly, in irritation of the throat, caused by a foreign body which has disappeared after producing the lesion, the patient may continue to suffer for a long time at the seat of the primary injury and to feel the presence of the foreign body, although it is no longer there. If the painful spot is made completely insensitive this sensation of pain will completely vanish. It is probable that in whooping cough complete anaesthesia suppresses the sensation and the irritability, which together form the point of departure of the attack. One must consider, that the reaction of the medulla oblongata in whooping cough, as well as in different forms of asthma, is out of all proportion to the peripheral irritation,—one understands then, that it suffices to suppress, either by destroying or anaesthetizing for a moment, the pretext of this letting loose of irritation in order to modify the course of the disease. But is this action simply anti-spasmodic? Dr.

de Rothschild does not think so, for the immediate cure determined in two patients, the evolution of the disease, which was abridged and interrupted in seven others, and permanently, appear to demonstrate to the contrary, that chloroform acts as a strong antiseptic. He thinks it probable that the passage of the vapors of chloroform at the moment of narcosis, the elimination of the drug by the lungs, the reflex hypersecretion from the mucous membranes which it determines ulteriorly should act directly or indirectly on the specific microbic elements of whooping cough. Whatever the nature of the action of chloroform on pertussis may be, it is most favorable. He even thinks that the action is specific. The number of cases treated is as yet insufficient to enable him to form a complete judgment; but he hopes that practitioners will employ this remedy and by adding fresh observations will confirm what he has observed.

**Milk Adulteration in Toronto.**—The ever fresh subject of milk adulteration has been brought under public notice lately by a bulletin issued from the chemical department of the Inland Revenue Department, Ottawa. Of the 31 samples of milk collected in Toronto by the department inspector, 13 were found genuine; 11 doubtful, 7 adulterated. The adulterant in five instances was water; in two instances partly skimmed milk was sold. This is not a bad result, though there is room for improvement. Annual inspection of dairies by our municipal health department and occasional exposures, made by the analysts, assist in keeping our city milk supplies in fairly good condition. The addition of Toronto water to milk will not improve it; but will not, we hope, produce typhoid fever in the consumers—the principal danger to be apprehended when water is added to milk. The skimming of milk is robbery and should be punished by bringing the offenders before the police magistrate. “The practice in the milk trade,” says Fox (*Sanitary Examinations of Water, Air and Food*), “is to rob the fresh milk of cream by pouring into it skimmed milk. The specific gravity, having thus been raised abnormally high, is toned down to the specific gravity, of good, rich milk by dosing it with water.” During the discussion on milk supplies in the section of State Medicine B.M.A., Toronto, Professor Glaister urged that the weak spot in the existing law and regulations respect-

the milk supplies was that executive action was deferred until the harm had been done. He advocated a system of inspection and supervision which would be as far as possible preventive in its operation. The soundness of this advice is apparent; but, even when inspection is done, grave defects are discovered, in the dairies supplying milk to a large city, as appear from the City of Chicago Bulletin of the Department of Health (Sept. 1, 1906, No. 35, p. 3). "The dairy inspectors inspected 116 dairies, representing 2,546 cows, among which only two diseased animals were found. No 'wet malt' was being fed in any of the dairies inspected this month. Eighteen dairies were denied the right to ship milk to Chicago for the following reasons: One for dirty methods of milking; 6 for bad condition of the herds; 6 for bad sanitary condition of the barns, and 5 for bad sanitary condition of the milk houses." Chicago has a monthly inspection of dairies.

**Tuberculosis Discussed at the Third Congress of French-Speaking Physicians of North America.**—In the section of Medicine, at the third congress of French-speaking physicians of North America, held at Three Rivers (Quebec), June 26th-28th, the question of tuberculosis was very fully discussed. The principal report read by Dr. Arthur Rousseau, of the Laval Medical Faculty, was entitled "A report on the etiology and prevention of tuberculosis in Canada," Dr. J. G. Paradis (Montmagny) also presented a report on the same subject. Remarks were also made by Dr. Triboulet, Dr. E. F. Panneton, Dr. Foucher, Dr. Laval, Dr. Beique and Dr. D'Amour. The following resolutions were subsequently adopted: In consideration of the fact that a state of organic breakdown, hereditary or acquired, favors the development of tuberculosis in many persons and that tubercular infection is extremely prevalent in Quebec, especially in families, the Association of Physicians of the French language of North America adopts the following resolutions: (1) That an active hygienic propaganda should be organized by the State under the direction of the Board of Health of the Province of Quebec. (2) That efforts should be made to develop among the people a taste for exercises suitable for increasing physical strength. (3) That a knowledge of the principles which in marriage and in the family can assure the production of a strong race and in particular, guarantee us against the dangers resulting to the child from

enforced privation of its mother's milk be generally made known. (4) That a careful inspection be made of schools and workshops, and that attention be, at the same time, paid to the general hygiene of these establishments and to the conditions of labor. (5) That a knowledge of the conditions of salubrity in private and public buildings be generally made known, and that the erection of unhealthy new habitations in cities be forbidden. (6) That certain faults against hygiene, such as the act of spitting on the ground in public places and even on the sidewalks be considered as offences and put down by means of suitable penalties. (7) That the State should supply tuberculin gratuitously for the diagnosis of bovine tuberculosis and should devote attention to indemnifying farmers who consent to the slaughtering of their tubercular cattle. (8) That it is important to interest benevolent societies, especially religious associations, in the creation of establishments which gather together in the country children in danger of catching tuberculosis in infected homes. (9) That, for the study of tuberculosis and the hygienic instruction of our population, it is urgent to interest the public and the existing hospitals in the establishment of anti-tubercular dispensaries, on a simple and inexpensive plan. (10) That the State should occupy itself with overseeing public interests, invested in insurance companies and in mutual associations, and assist the efforts of private initiative, tending to engage such institutions in the establishment of popular sanatoria.

**Congress of French-Speaking Physicians of North America at Three Rivers, June 26-28, 1906.**—We notice in *Le Bulletin Médical de Québec*, Juillet, 1906, that the Congress of French-speaking physicians of North America, held at Three Rivers, Québec, June 26-28, was well attended, and that the officers of the congress, notably Dr. Normand and Dr. De Blois, deserve to be felicitated on the success of their laudable efforts. It is further stated that over 120 papers and reports were presented; over 300 members registered. Three distinguished representatives of the French medical profession, Dr. Triboulet, delegate of the French Government; Prof. Prost, representative of the University of Paris, and Dr. Loir, representative of the French Association for the Advancement of Science were present and took part in the discussions. The next meeting of this congress will take place in the City of

Quebec, June, 1908, coinciding in point of time with the festivals which will take place in the ancient capital to celebrate the tercentenary of the foundation of Quebec by Champlain in 1608. The election of officers terminated as follows: Dr. Arthur Simard, president; Dr. H. Herveux, 1st vice-president; Dr. Lanoix, vice-president for the United States; Dr. Sirois, vice-president for the rural districts; Dr. Albert Paquet, general secretary; Dr. F. X. Dorion, treasurer.

J. J. C.

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#### PERSONALS.

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Dr. B. E. McKENZIE and Mrs. McKenzie tendered an evening reception to the members of the American Orthopedic Society at their residence on Bloor Street. The A. O. S. convened the day previous to the B. M. A. meeting. Dr. McKenzie's hospitality was much enjoyed by all present, and an opportunity was afforded to again enjoy a chat with the former Torontonians, Dr. and Mrs. Galloway, whom Winnipeg and the great West have claimed, and who speak in terms of admiration of their new home and Western life and ways.

## Correspondence.

*The Editor cannot hold himself responsible for any views expressed in this Department.*

### THE RECENT FIRE AT QUEEN'S UNIVERSITY, KINGSTON.

*To the Editor of THE CANADIAN JOURNAL OF MEDICINE AND SURGERY :*

*My Dear Doctor,*—On the morning of July 4th, a fire occurred in the Medical Building of Queen's University, originating in one of the bacteriological laboratories, probably from a leak of gas in connection with one of the incubators.

The press reports very much exaggerated the extent of the damage. Our insurance has been adjusted at \$1,500 on the building, and \$1,400 on the contents, and this is considered a fair settlement.

Work was at once commenced on the repairs to the building, and these will now soon be completed. New apparatus for the laboratory has been ordered from England, and it will be on hand long before the opening of the session. In the meantime the absolutely necessary apparatus has been borrowed from Toronto, and the work of the Public Health Department has been going on as usual with an interruption of only three days. Our most serious loss is in the library, where some sets of books have been entirely destroyed.

We desire you to inform students intending to enter their medical course next session, that there will be no interference with the work of the Faculty, and there need be no alteration of their plans.

The session opens on September 26th, and the prospects are that there will be the usual increase in attendance.

Work will soon begin on the new medical laboratories building to cost \$50,000. It is expected that this will be the best equipped set of laboratories in the country.

On behalf of the Faculty,

J. C. CONNELL, *Dean.*

W. T. CONNELL, *Sec.*

## ❁ News of the Month. ❁

### A CREDITABLE RECORD.

FIGURES handed out recently give some details respecting the work of the Independent Order of Foresters for the year 1906 up to September 1. The number of applications for membership acted upon by the Medical Board may always be regarded as indicating the standing of the society in public favor. They are as follows:—

	Ac- cepted	Re- jected	Total Received
January.....	2,827	442	3,269
February.....	3,591	513	4,104
March.....	4,442	597	5,039
April.....	4,128	513	4,604
May.....	3,585	466	4,041
June.....	3,229	426	3,655
July.....	2,613	389	3,002
August.....	2,383	391	2,774
Grand Total.....	26,798	3,727	30,525

If the work accomplished thus far during 1906 may be accepted as indicating that for the balance of the year, it will far exceed in results the average for the preceding four years. In net gain of membership the figures for the six months elapsed to the 1st of July are much in excess of those for the whole of either of the two preceding years. During the eight months of 1906 to the 1st of September the accumulated funds were increased by \$592,525.02, standing on the 1st of September at \$10,302,108.85, after paying all charges for management expenses and the following benefits:—

Insurance or death benefits.....	\$1,299,191.39
Total disability benefits.....	72,535.67
Old age benefits (including expectation of life).....	50,789.84
Sickness benefits.....	145,783.88
Funeral benefits.....	10,156.57

Total benefits paid in eight months of 1906. \$1,578,457.36

In view of the disturbed condition of the insurance world during the past year it is but natural to find the public nervousness about taking up life insurance reflected in a reduced volume of business. It does not, however, appear to have extended to the



I.O.F., which the officers of the order point out, has kept on the even tenor of its way, still doing an increased and progressive business.—*Exchange.*

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### TRINITY MEDS. DINE.

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Of all the many interesting social functions held in this city during the Medical Association week there were none that surpassed in interest and enthusiasm the banquet of the Alumni of Trinity Medical College. Through the activity of Dr. J. B. McMurrich and other old grads. of the city, a goodly number of the "boys" were got together at the St. Charles Café to pay their respects to Dr. Geikie, who was our honored Dean for twenty-five years, and had all the responsibility of the conduct of the College for thirty-two years prior to its amalgamation with Toronto University. Around that table were gathered men whose homes were scattered all over this old world, and whose speeches, largely reminiscent, told of old days spent in the acquirement of medical knowledge within the walls of old Trinity. It was an interesting moment when Dr. Luke Teskey arose and, in a neat and eulogistic address, presented to Dr. Geikie, on behalf of those present, a beautiful loving cup. The prolonged applause having subsided, Dr. Geikie replied in a speech full of his old time vigor, in which, after thanking his old students for their token of love and esteem, he traced the history of the College from its inception to the day of amalgamation. The early struggles of the Institution were reviewed, as well as the phenomenal success which attended the efforts of the faculty and students through all its years of activity.

After a period of speech-making and song, those present, after joining hands, sang "Auld Lang Syne."

Some of those present were: Dr. Adams, West China; Dr. Mcbray, Innisfail, Alta.; Dr. Crawford, Calgary, Alta.; Dr. Ashton, Quincy, Ill.; Dr. Hicks, Alleghany, N.Y.; Dr. Vanstone, Winnipeg, Man.; Dr. Curtis, Paterson, N.J., and many others.

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### ONTARIO MEDICAL LIBRARY ASSOCIATION.

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*Hours of Opening:* The library is open to members each weekday from 10 a.m. to 1 p.m. and from 2 p.m. to 6 p.m., except Saturdays, when it closes at 1 p.m.

*Loans:* Books can be loaned to members for two weeks, periodicals for three days.

*Loans out of Toronto:* Books and journals will be loaned

to members of the Ontario Medical Association outside of Toronto, provided: 1. That such precautions be taken in packing as to guard against any injury in transportation. 2. That the borrower shall pay express charges both ways.

The library will be glad to receive gifts of books, journals and reprints.

Some of the recent accessions to the Library, are:—Ashton: Practice of Gynaecology, 1905; von Bergman: System of Surgery, 5 vols.; Babcock: Diseases of the Heart, 1903; Barker: Spalteholz's Atlas of Human Anatomy, 1905; Baruch: Principles and Practice of Hydrotherapy, 1904; Belot: Radiotherapy, 1905; Barr: Mental Defectives, 1905; Cheyne & Burghard: Manual of Surgical Treatment, 6 vols.; Cabot: Modern Clinical Medicine, 2 vols. published; Chittenden: Physiological Economy in Nutrition, 1905; Cushny: Pharmacology and Therapeutics, 1905; Edgar: Practice of Obstetrics, 1904; Gould: Biographic Clinics, 1905; Hewlett: Krehl's Clinical Pathology, 1905; Huntington: Anatomy of the Human Peritoneum, 1903; Hutchinson: Food and Dietetics, 1906; Kelly & Hurdon: The Vermiform Appendix and its Diseases, 1905; Lindsay: Diseases of the Lungs and Heart, 1904; Mummery: After-Treatment of Operations: 1903; Moynihan: Abdominal Operations, 1905; Nothnagel: System of Medicine, 11 vols.; Ochsner: Clinical Surgery, 1904; Park (Roswell): An Epitome of the History of Medicine, 1903; Posey & Wright: Diseases of the Eye, Ear, Nose and Throat; Osler: Practice of Medicine, 1905; Robson & Moynihan: Diseases of the Stomach, 1904; Sahli: Diagnostic Methods, 1905; Scudder: Treatment of Fractures, 1904; Wright (A. H.): Text-Book of Obstetrics, 1905; Whitman: Orthopaedic Surgery, 2nd, edition.

*Transactions, Reports and Periodicals:* Association of American Physicians; American Pediatric Soc.; American Climatological Association; American Roentgen Ray Soc.; American College of Physicians; American Laryngological Association; American Laryng., Rhino. and Otol. Soc.; Henry Phipps Institute; Münchener Medizinische; Deutsche Medizinische;

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#### BRITISH MEDICAL ASSOCIATION EXHIBITS.

(Continued.)

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ALLEN & HANBURY'S exhibit comprised a large variety of aseptic furniture for operating theatre, ward, etc, and a model of operation table in phosphor bronze made by the above firm for His Majesty King Edward VII., for presentation. This table was selected by Sir Frederick Treves, after inspecting every other form,

as the most complete and yet simplest operation table made. Every position is obtainable and automatically fixed at any point.

A. & H.'s registered dressing or instrument tables are the cleanest made, every corner being dispensed with.

The thoroughly strong and British-like structure of A. & H.'s furniture is admirable.

A. & H.'s patent operation table is in use at 14 of large London hospitals or infirmaries as well as other institutions all over the world. A large display of surgical instruments manufactured in A. & H.'s factory in London, Eng., were also displayed, including intestinal blanks, lithotrites, bladder and urethral instruments, anesthetic apparatus, Killian's instruments for nasal septum and frontal sinus, improved patterns of necote holders, self-retaining abdominal retractors, instruments for wiring and screwing ununited fractures, skull and brain instruments, gall bladder forceps and scoops, empyema and cleft palate instruments. Also Stack's portable dressing sterilizer, which can be used on ordinary Bunsen burner, kitchen fire, etc., the cost of this article, \$10.00, is quickly repaid to any surgeon doing even a few operations.

All the above are now kept in stock in Toronto at Allen & Hanburys, 66 Gerrard Street East, Mr. Lloyd Wood, manager.

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#### NEW STAFF FOR THE HOSPITAL FOR SICK CHILDREN.

THE trustees of the Hospital for Sick Children have appointed the following staff for the year commencing 1st July, 1906.

Consulting Staff, Surgical—Dr. R. B. Nevitt, 46 Bloor St. W.; Dr. G. A. Peters, 102 College St.; Dr. N. A. Powell, 167 College St. Medical—Dr. A. McPhedran, 151 Bloor St. W.; Dr. H. C. Scadding, 182 Bloor St. W.; Dr. R. J. Wilson, 20 Bloor St. W.

Surgical Services, No. 1—Mr. Irving H. Cameron, 307 Sherbourne St., Senior; Dr. A. Primrose, 100 College St., Associate; Dr. B. Milner, 414 Bloor St. W., Junior. No. 2—Dr. G. A. Bingham, 68 Isabella St., Senior; Dr. F. N. G. Starr, 112 College St., Associate; Dr. Charles Shuttleworth, 45 Bloor St. E., Junior. The surgical services are co-equal in status. They are numbered separately for convenience.

Orthopedic Service—Dr. Clarence Starr, 224 Bloor St. W., Senior; Dr. W. Gallie, Toronto, Associate.

Medical Services, No. 1—Dr. H. T. Machell, 95 Bellevue Ave., Senior; Dr. W. B. Thistle, 171 College St., Associate; Dr. R. D. Rudolf, 396 Bloor St. W., Junior. No. 2—Dr. Allen Baines, 228 Bloor St. W., Senior; Dr. J. T. Fotheringham, 20

Wellesley St., Associate; Dr. H. C. Parsons, 72 Bloor St. W. The medical services are co-equal in status. They are numbered separately for convenience.

Isolation Wards, Medical—Dr. Wm. Goldie, 84 College St.; Dr. C. J. Copp, 96 Wellesley St., Associate. Surgical—Dr. S. Westman, Toronto.

Specialists, Eye—Dr. R. A. Reeve, Bloor and Park Road, Senior; Dr. James MacCallum, 13 Bloor St. W., Associate; Dr. W. Lowry, Toronto, Junior. Ear, Nose and Throat—Dr. G. Wishart, 47 Grosvenor St., Senior; Dr. G. Boyd, 167 Bloor St. E., Associate; Dr. D. N. Maclellan, 126 Bloor St. W., Junior. Pathologist—Dr. T. D. Archibald, 367 College St. Anesthetist—Dr. Alon Canfield, 636 Bathurst St. Registrars, Surgical—Dr. E. Stanley Ryerson, 261 College St. Medical—Dr. H. S. Hutchison, 317 Sherbourne St. Director of the Roentgen Rays Dept.—Dr. Samuel Cummings, 402 Bloor St. W.

Residents—Dr. A. C. Bennett from 1st January, 1906, to 31st December, 1906. Drs. A. H. Rolph, James C. Masson, Robert E. Woodhouse for one year each, from 1st July, 1906, and R. A. Jones and Fred. W. Manning for one year each, from 1st Jan., 1907.

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#### FINAL EXAMINATIONS ONTARIO COLLEGE PHYSICIANS AND SURGEONS.

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THE following candidates passed the final examination of the College of Physicians and Surgeons of Ontario, May, 1906: W. A. Atkinson, Barrie; A. R. Alguire, Cornwall; W. J. Bell, Toronto; J. H. Brodrecht, New Hamburg; H. W. Burgess, Toronto; W. J. Browley, Hamilton; S. J. Boyd, Sutton West; A. C. Bennett, M. R. Blake, Toronto; T. C. Brereton, Bethany; P. C. Bonghart, London; G. Boyd, Gravenhurst; Mary Bryson, Ottawa; F. L. Beer, London; A. W. Beattie, Pond Mills; Edith Beatty, Fergus; Elizabeth Bagshaw, Toronto; R. H. Bonycastle, Campbellford; W. H. Cameron, Arthur; H. D. Cowper, Welland; M. H. Cameron, Toronto; H. B. Coleman, Cookstown; D. G. Cameron, Wallacetown; J. Campbell, London; R. J. Carson, Sunderland; W. F. Clemesha, Port Hope; Mary Callaghan, Toronto; J. M. Dalrymple, Bismarek; W. J. Dobbie, Guelph; W. Dales, Silver Hill; E. C. Dickson, Orillia; J. M. Dale, Oakwood; S. R. Dalrymple, Bismarek; D. L. Ewin, St. Thomas; H. M. East, G. E. Eakins, Toronto; C. B. Eckel, Pembroke; R. B. Fitzgerald, Sanborn, N.Y.; Geo. Ford, Toronto; J. F. Finnigan, Oshawa; W. C. Gilday, Toronto; H. Giendinning, Valentine; W. J. Gould, London; W. E. Grimshaw, Wolfe Island;

O. Glenn, Adelaide; A. J. Gilchrist, Toronto; C. A. Gaviller, Grand Valley; J. A. Gallagher, Toronto; R. E. Hughes, Ottawa; J. E. C. Henderson, Hamilton; A. Henderson, Palmerston; J. F. Hogan, Kingston; E. Hixon, Glen Oak; A. Keane, Essex; H. C. Kindred, Havelock; J. A. Kinnear, Toronto; G. G. Little, Windsor; G. C. Leach, Fenella; L. C. Lauchland, Oshawa; M. W. Locke, Brinstin's Corners; R. C. Lowrey, Toronto; W. S. Lemon, Aylmer; W. S. Laird, Guelph; W. Merritt, Smithville; A. C. Munns, Moorfield; G. L. MacKinnon, Orangeville; G. D. Maclean, Woodbridge; R. J. Maclaren, Columbus; H. S. Mucklestone, Perth; F. W. Mohr, Ottawa; B. D. Munro, Toronto; R. J. Marion, Fort William; T. T. McRae, Cranbrook; W. J. McCormick, Toronto; S. McCollum, Beaver Mills; W. B. McNaughton, St. Raphael; D. McKenzie, Morden; A. A. McIntyre, Milverton; W. E. McLellan, Almonte; D. F. McLachan, Essex; J. H. McPhedran, Wanstead; M. J. C. Naftel, Goderich; W. J. O'Hara, Cayuga; W. R. Patterson, Kingston; E. C. A. Reynolds, Scarboro' Junction; Hanna Reid, Tillonsburg; L. G. Rowntree, London; H. L. Reazin, Toronto; J. D. Reid, Prescott; Olive Rea, Toronto; Minerva Reid, Tillonsburg; E. Sutherland, Montreal; J. R. Stewart, Wawa; J. Spiers, Drumbo; A. H. Spohn, Penetanguishene; G. S. Strathy, C. E. Spence, Toronto; Charles Schlichter, New Dundee; A. Sinclair, Kilsyth; R. W. Tisdale, Lyndoch; R. A. Thomas, Toronto; R. E. Valin, Ottawa; A. L. Webb, Brighton; C. A. Wigle, Warton; A. M. Watson, London; J. W. Wigham; J. L. Wilson, Toronto; W. M. Wilkinson Woodstock; C. A. Young, Ottawa.

# The Physician's Library.

## BOOK REVIEWS.

*Medical Jurisprudence, Forensic Medicine and Toxicology.* By R. A. WITTHAUS, A.M., M.D., Professor of Chemistry, Physics, and Toxicology in Cornell University; and TRACY C. BECKER, A.B., LL.D., Counsellor at Law, Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo; with the collaboration of August Becker, Esq.; Chas. A. Boston, Esq.; Hon. Goodwin Brown; W. W. Bullard, M.D.; G. C. Cameron, M.D.; J. Clifton Edgar, M.D.; Jas. Ewing, M.D.; E. W. Fisher, M.D.; J. C. Johnson, M.D.; D. D. Lamb, M.D.; H. P. Loomis, M.D.; W. B. Outten, M.D.; Roswell Park, M.D.; J. Parmenter, M.D.; Irving C. Rosse, M.D.; E. V. Stoddard, M.D.; G. W. Woolsley, M.D.; J. H. Woodward, M.D. Second Edition, Volume I. New York: Wm. Wood & Co. 1906.

This is indeed quite an important work. Volume I. consists of nearly 1,000 pages, seven hundred of which are devoted to Medical Jurisprudence, and the balance to Forensic Medicine. Dr. Witthaus contributes twenty-nine pages in a most interesting manner to what he terms the introduction, though in reality it is deserving of a more important title. The following twenty-five pages consist of a table of cases, as cited in Vol. I., adding materially to its value as a scientific work. Under the section devoted to Medical Jurisprudence we find chapters upon "Legislation Governing Physicians and Surgeons as Such," "The Legal Relations of Physicians and Surgeons," "Evidence of Communications between Patient and Physician," and "Synopsis of the Laws Regulating the Practice of Medicine." Under Forensic Medicine several important articles are contributed, dealing with "The Legal Status of the Dead Body," "The Powers and Duties of Coroners," "Medico-Legal Autopsies," "Personal Identity," "Determination of the Time of Death," "Death by Heat and Cold," and "Death by Starvation." Perhaps the most interesting is that from the pen of H. P. Loomis on "Determination of the Time of Death." In referring to the data upon which opinion as to time of death is formed, he says that some medical jurists have attempted to give a more definite character to these changes

in the recently dead body by dividing the interval between the stopping of the heart's action and the beginning of putrefaction into three periods. In the first, the warmth, pliability and muscular irritability remain. In the second these conditions are lost, and the body is cold and rigid. In the third the body is cold and pliant, the muscles are relaxed and the joints are flexible, the cadaveric rigidity having entirely ceased.

From a somewhat careful résumé of this work we feel that it is a distinct addition to the literature on Medical Jurisprudence.

W. A. Y.

*Portfolio of Demochromes.* By PROFESSOR JACOBI, of Freiburg, in Breisgau. English adaptation of text by J. J. Pringle, M.B., F.R.C.P., Physician to the Department for Diseases of the Skin at Middlesex Hospital, London. Part III. London: Rebman Limited, 129 Shaftesbury Avenue, Cambridge Circus, W.C. New York Agents: Rebman Company, 1123 Broadway. Toronto Representative: Mr. Wingate.

It is with a great deal of pleasure that we recently looked over Part III of Jacobi's Atlas of Skin Diseases, or, as he terms it, Portfolio of Demochromes. The volume is particularly fine, each reproduction being almost a work of art. We do not recollect of having seen anywhere more delicate coloring in many of the illustrations than those in this book. Especially true to nature are those of Chloasma, Sclerodema, Acne Rosacea, Scabies, Ecthyma, Eczema Chronicum Infantum, and Rodent Ulcer. As an assistant in the diagnosis of many obscure skin diseases, we do not know of any work which will be found so helpful.

*Rational Hydrotherapy.* A manual of the physiological and therapeutic effects of hydiatic procedure, and the technique of their application in the treatment of disease. By J. H. KELLOGG, M.D., Supt. Battle Creek (Mich.), Sanitarium, with two hundred and ninety-three illustrations, nineteen in color. Third revised edition. F. A. Davis Co., publishers. W. J. McCormick, M.D., 304 Crawford Street, Toronto, Sales Agent. Price, Cloth. \$6.00; Half Russia, \$7.00.

The keen interest taken in serum, and hydrotherapy, is an evidence of the evolution going on in practical therapeutics. Whilst the proper use of drugs will always hold its place, yet the day is fast passing, when neither doctor or patient will be satisfied with a prescription and a few perfunctory instructions. Every vital function should be brought up to a normal degree of efficiency if possible, and no one factor is more potent for good, especially to the processes of assimilation and elimination than water, and no author has described its virtues more lucidly than Dr. Kellogg in his third

edition of "Rational Hydrotherapy." This work of over twelve hundred pages deals very fully with the principles and technique of hydriatics. It is divided into chapters, and these again into paragraphs, each of which is numbered. The author has a very felicitous style of expression. The language is plain; the sentences express facts concisely, and the paragraphs are so well constructed that the reader passes on from one to another with unabated interest. There is not a dull or unprofitable page in the book. The technique to be used in every mode of applying water, is so profusely illustrated that a physician with Kellogg's book, a pitcher of water and a towel, may do more to relieve his patient than by the aid of a drug store. Methods and principles so simple as to be carried out in the humblest cottage, as well as the mechanism of the electric baths, etc., of the expensive sanitarium, are given in minute detail. The numbered paragraph makes a reference to the treatment of any phase of a disease readily accessible. This book is worth many times its price to every physician, surgeon, or specialist.

J. H.

*The Medical Annual.*—A year-book of treatment and practitioners' index. 1906. 24th year. Bristol: John Wright & Co., Stone Bridge. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. Toronto: J. A. Carveth & Co.

It is quite late in its appearance, owing to exceptional difficulties. The Medical Annual for 1906 has come to hand. The volume is larger than that of any former year, and is replete with many of the most recent discoveries in medical science. Among the contributors are Drs. Jos. Blumfield, Victor Bonney, E. H. Fenwick, Fredk. Gardner, E. W. Goodall, Wilfred Jas. Hadley, Jos. Priestley, A. W. Mayo Robson, Purves Stewart, Boardman Reed, Ralph Stockman, Norman Walker, and P. Watson Williams.

The Medical Annual has for some time now been always a most welcome yearly addition to many an active practitioner's library, and that of 1906 will be no exception to the rule. It may be looked upon with its predecessors as a complete exposition of the present position of medical science.

W. A. Y.

*The Chemistry, Physiology, and Pathology of Uric Acid, and the Physiologically Important Purin Bodies, with a discussion on The Metabolism in Gout.* By FRANCIS H. McCrudden. From Paul B. Hoeber, 69 E. 59th St., New York.

This work, by an American, is a praiseworthy contribution to medical science. The author says, *inter alia*: "I have made a thorough study of the pure chemistry of uric acid and of its de-



composition products, and of those purin bodies which have physiological importance, of the behavior of uric acid in solutions of pure water, in the solution of simple and mixed electrolytes, and of organic compounds, and on the urine and blood. I have attempted to study all the research that has been done in the physiology of uric acid, the effects of food, and of the qualitative and quantitative change with food, the effects of alcohol, exercise and other physiological functions, and also the research on uric acid in pathological conditions of all kinds, especially in gout. I have also studied the work on the General Metabolism in Gout."

The author is not a theorist. He says: "I have adhered closely to an exact statement of experimental data throughout, and have ventured in but few cases to propound a theoretical explanation of the facts, relying on the arrangements of the facts themselves to bring out the explanation."

Dr. McCrudden is not optimistic as to the effects of drugs on the uric acid present in the human economy, saying at p. 257: "It is probably quite true that there is no drug which we can say either decreases the formation of uric acid, furthers its excretion, hastens its further oxidation or increases its solubility in the blood or tissue fluids."

All of which is doubtless true. However, when all is said, the experiments which have been made upon the metabolism of gouty subjects all fail to afford any rational basis for the therapeutic use of colchicum, yet it is found by unprejudiced observers to be the physician's sheet anchor, at any rate in the acute stages of gout.

J. J. C.

*Green's Encyclopaedia and Dictionary of Medicine and Surgery.*  
Vol. I. Aachen-Brain. Edinburgh and London: William Green & Sons.

As the name would indicate, this is an alphabetically arrayed repertory of information on all subjects, medical and surgical, this volume being but the first of ten large Imp. Svo. volumes. The series will consist of over 10,000 separate articles, written by the most competent authorities, and to a large extent incorporating the "Encyclopaedia Medica." The work in compiling such a library, and condensing that amount of material into ten volumes is a mammoth one; but the mere fact that it has been undertaken by a publishing house of the standing of William Green & Sons, means that it will be carried to a successful conclusion.

The first point that strikes the reader of volume one is that the authors have determined to boil down everything, so that the physician, on consulting any particular chapter, gets at once the gist of his subject, a most important point for a busy man.

Though this is the case, the work shows also a completeness and correctness that is most satisfactory. Cross references have also been freely used, adding to the literary value of the book. Volume one takes in practically everything from the letters *Alachen* to *Brain*. It would be impossible to anything like even in part enumerate what each volume contains, suffice it to say that each is a *multum in parvo*, and worth a great deal more than the price asked for the entire set, viz., \$25.50, payable if desired in instalments, and to be had from the Canadian Law Book Co., Toronto, who are Canadian agents. W. A. Y.

*The Nature and Treatment of Cancer.* (Some methods of Hypodermic Medication in the treatment of inoperable Cancer.) By JOHN A. SHAW-MACKENZIE, M.D., Lond. Third Edition, Revised and Enlarged. London: Bailliere, Tindall & Cox, 8 Henrietta Street, Covent Garden. 1906. (All rights reserved.) Canadian Agents: J. A. Carveth & Co., Ltd., Toronto.

Every book on this subject must attract attention. Hypodermic medication in the treatment of inoperable cancer has been written on by this author before. This book is rather an elaboration of his former writings; it has all the advantages of the former book with a large amount of added experience and also some distinctly new ideas, among which I would particularly mention the pancreatic treatment. The writer is very much in earnest in what he says, and this book will be read with a great deal of interest by a very large number of people. A. J. J.

*Lectures on Clinical Psychiatry.* By DR. EMIL KRAPPELIN, Professor of Psychiatry in the University of Munich. Authorized translation from the second German edition. Revised and edited by Thomas Johnston, M.D., Edin., M.R.C.P., Lond. Member of the Medico-Psychological Association of Great Britain and Ireland. Second English Edition. London: Bailliere, Tindall & Cox, 8 Henrietta Street, Covent Garden. Canadian Agents: J. A. Carveth & Co., 1906.

This series of lectures cannot fail to be of the greatest interest and use to any serious student of mental diseases, although the author does not desire them to be regarded as a text-book of alienism, but rather as a guide to the clinical investigation of the insane. Professor Krapelin is one of the most eminent living alienists, and his Clinic is always a chief part of the quest of an English or American visitor to the Continental Schools. Like many other earnest investigators he has introduced a classi-

fication of mental diseases which seems to him adequate, and which has been largely adopted in Europe and America, though differing somewhat in simplicity and clearness from that of Clouston and most of the English teachers. The author fully appreciates the difficulty which always confronts the clinical lecturer on mental diseases of only being able to portray one phase of the form of disease under consideration, namely, that existing at the time of the clinical examination: and that for the complete elucidation of the case often extending over a period of many months, further examinations and lectures become necessary. These wonderfully descriptive clinical pictures will have an absorbing charm for many students of mental diseases.

-N. H. B.

*Prophylaxis and Treatment of Internal Diseases.* By FREDRICK FORCHHEIMER, M.D., Professor of Theory and Practice of Medicine and Clinical Medicine, Medical College of Ohio, University of Cincinnati, Cincinnati, Ohio. Cloth, price \$5.00 net.

This is an eminently practical work, one which concerns itself diligently with the business in hand. It first lays down broad principles, then details the special applications of them, where possible; failing that, it indicates the proper direction for their application.

It is essentially a work of breadth. It is also essentially a work of experience. Free from dogmatism, there is the calm assurance of one to whom the path is familiar. In these days of therapeutic pessimism, it is refreshing to find a practical physician to whom the making of a correct diagnosis is but the beginning rather than the end of his craft.

Dr. Forchheimer undertook a difficult task, but we believe that he has given us a most excellent work—one that will have a large sale to the general practitioner—a book which has long been in demand.

*Progressive Medicine.* A quarterly digest of advances discoveries, and improvements in the medical and surgical sciences. Edited by HOBART AMORY HARE, M.D., assisted by H. R. M. LAUDES, M.D. Philadelphia and New York: Lea Brothers & Co. June, 1906.

The contents of this interesting and instructive volume include reviews on hernia, surgery of the abdomen, various subjects connected with gynecology, diseases of the blood, spleen, thyroid gland and lymphatic system, and on ophthalmology.

In the section on gynecology there is a careful and elaborate review of the literature on carcinoma of the uterus. Dr. Clark

says that the etiology of carcinoma has been freely discussed recently. This discussion only serves to emphasize the fact that the cause of carcinoma is still unknown, and proves that no theory has been substantiated. He also says that an early diagnosis is the most important factor in the prognosis, and is more important than the technique of the operation.

In diseases of the blood we have an interesting review of the literature of pernicious anemia. Other articles treat on diabetes, gout, and exophthalmic goitre. In treating patients with exophthalmic goitre Christian gives the blood of thyroidectomized goats. The blood was desiccated and given in tablet form, and the results are encouraging.

The section on ophthalmology is full of interest, and contains among other topics discussions on conjunctivitis and trachoma.

A. E.

*Handbook of Meat Inspection.* By DR. ROBERT OSTERTAG, Professor in the Veterinary High School at Berlin. With 260 Illustrations and one colored plate. Authorized Translation by Earley Vernon Wilcox, A.M., Ph.D., Veterinary Editor *Experiment Station Record*. With an Introduction by John R. Mohler, A.M., V.M.D., Chief of Pathological Division United States Bureau of Animal Industry. New York: William R. Jenkins, Veterinary Publisher and Bookseller, 851-853 Sixth Avenue. 1904.

It is high time that the subject of meat inspection, done by competent inspectors, was earnestly discussed in the Canadian medical press. In Canada there is no real inspection of meats intended for export, nor of meats intended for home consumption either.

We think that the municipal authorities should exercise the right to erect a slaughter house and compel butchers to slaughter in it, and, accordingly, to forbid the further use of private slaughter houses.

Section 9, Schedule B of the Ontario Public Health Act provides, *inter alia*, that all animals to be slaughtered and all fresh meat exposed for sale in the municipality shall be subject to like inspection. This excellent rule has been neglected, and is practically a dead letter.

A beginning of *bona fide* meat inspection should be made in the larger cities of this Province, in some of which there are several concerns engaged in the preparation of meat products, as well as large supplies of meats for domestic use. Dr. Ostertag's fine book, in its English dress, would then become the meat inspectors' handbook. The English translation by Dr. E. V. Wilcox is creditably done.

J. J. C.

A *Treatise on Surgery*. In two volumes. By GEORGE R. FOWLER, M.D., Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York; Emeritus Professor of Surgery in the New York Polyclinic, etc. Two imperial octavos of 725 pages each, with 888 text illustrations and 4 colored plates, all original. Philadelphia and London: W. B. Saunders Company. Canadian Agents, J. A. Carveth & Co., Limited, 434 Yonge Street, Toronto. 1906. Per set: Cloth \$15.00 net; half morocco, \$17.00 net.

Following upon our review in "May" of volume one of this splendid work, we have received the second volume, and lose no time in expressing the pleasure we have had in carefully perusing it. Fowler's Surgery as a work will be hard to excel for years to come, as it is wonderfully complete and yet not verbose.

Volume 2 continues Regional Surgery. It takes up surgery of the Dorsal and Lumbar Vertebrae, Surgery of the Abdominal and Pelvic Regions, Surgery of the Female Pelvic Organs, and Surgery of the upper and lower extremities.

The university authorities should not lose any time in adding Fowler to the list of recommended Text-Books.

W. A. Y.

*Physiology of the Nervous System*. By J. P. MORAT, of the University of Lyons. Authorized English edition. Translated and edited by H. W. Syers, M.A., M.D., (Catab). Physician to the Great Northern Central Hospital. With 263 illustrations (66 in colors). London: Archibald Constable & Co., Limited. 16 James St., Haymarket, S.W.

This work brings the subject before the reader in a clear and comprehensive way, and is the product of the latest research. The interdependence of the double currents of matter and energy, and the laws effecting their evolution, are skilfully worked out, and plainly expressed. The storehouse of energy which is replenished from the ingesta is drawn upon by the nervous system which does not in itself create force, but merely uses it whenever the organism requires it. To liberate this energy from the cellular storehouse, and to appropriately distribute it in accordance with the needs of the economy, constitutes one of the prominent functions of the nervous system, which the author lucidly describes. A full description is also given of the mechanism presiding over both voluntary and involuntary acts, and it is shown how the motor act arising either from external impressions immediate or remote, or from internal impulse or determination, is clearly designed for the protection and preservation of the individual. A most welcome attraction of this

treatise is the attention devoted to the functions of the nervous structures: an intimate knowledge of minute anatomy is an essential to the understanding of the functions, but Prof. Morat regards it as only the parent-stem, while the functions which are capable of modification are the fruit, and have a direct practical bearing upon the life of the race. It is true that the structure in a measure determines the character of the function, but it is also often true that by the function, the quality and repair of the structure is estimated. The section on Special Innervation deals exhaustively with the registration of sense impressions, their complexity and elaboration, and their importance as a source of instruction and protection. A concluding chapter of absorbing interest on Language and Ideation incidentally deals with psychological problems and offers suggestive scientific solutions. The paper, print and illustrations, many of which are colored, are all of the first quality, and in keeping with the general character of this excellent work.

*On Leprosy and Fish-Eating.*—A Statement of Facts and Explanations. By JONATHAN HUTCHINSON, F.R.S., F.R.C.S., etc. Archibald Constable & Co., London.

Mr. Jonathan Hutchinson's position upon the relationship of leprosy to the eating of decaying fish is well known to the readers of the *Lancet* and the *British Medical Journal*. For over forty years he has been a constant defender of the view first propounded by him. Since his first papers upon the subject the question has been to a certain extent cleared up by the discovery in 1874 of the Bacillus of Leprosy by Hansen, but on account of the inability to cultivate the bacillus or transmit the disease to other animals it seemed probable that there existed other conditions besides the actual presence of the bacillus.

This lack of positive knowledge, along with an enormous mass of accumulated facts, has confirmed Mr. Hutchinson in his belief in the ecological role of putrid fish.

The book is an intensely interesting one, filled with information in regard to the diet of many peoples, which shows the enthusiasm with which the author has collected his facts for these many years, yet when one has finished it one is unconvinced. There is undoubtedly an X factor, as Von Pettenkoffer would call it, in the etiology of Leprosy, and Mr. Hutchinson undoubtedly makes out a good case for putrid fish diet. But it is very doubtful if bacteriologists will be convinced by masses of statistics. They will withhold judgment until positive proof is offered. There is no doubt that sooner or later Leprosy will be successfully transmitted to some other animal than man, probably in

his blood relations the anthropoids, and when that is done the X factor will be discovered, but not till then. It is curious that Mr. Hutchins on does not refer to the possibility of an intermediate insect host, especially with the recent work before him upon Malaria, Yellow Fever, Sleeping Sickness and Fish Fever. Yet recent press dispatches announce a discovery in Hawaii that the bed-bug is the intermediate host for the bacillus. This seems very likely, specially when one remembers how the leprous tissues absolutely swarm with the organism.

In spite, however, of not being convinced by the book we may say we have read it through with very great interest, and can confidently recommend a perusal of it.

A. J. J.

*Carolina Lee.* By LILLIAN BELL. Toronto: The Copp, Clark Co., Limited.

Story book months, and so many trifles light as air to choose from. Many physicians visited Boston, last month to attend the American Medical Association meeting, and just at its close the Christian Scientists convened, and for the first time perhaps the real scientists embodied in the medical men viewed *en masse*, the self named scientists with the prefix. A rather interesting little southern story, tangled around the belief in christian science, with its heroine a true convert, has been told by LILLIAN BELL, in her latest book "Carolina Lee." Many doctors who hesitated to use their spare moments perusing Mrs. Eddy's large book, called *Science and Health*, from cover to cover, will find its principles and precepts attractively inculcated in this story, and we pledge it pleasant reading—a capsule in a chocolate drop.

W. A. Y.

*The Practical Medicine Series*, comprising ten volumes on the year's progress in Medicine and Surgery, under the general editorial charge of GUSTAVUS P. HEAD, M.D., Professor of Laryngology and Rhinology, Chicago Post Graduate Medical School. Vol. I. "General Medicine," edited by FRANK BILLINGS, M.S., M.D., Head of Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A.M., M.D., Professor of Medicine, Chicago Clinical School. Series 1906. Chicago: The Year Book Publishers, 40 Dearborn Street.

No one can open this book without feeling that the writer has practically left little to be said about any disease that he describes. The first one hundred and ten pages are devoted to a thorough consideration of tuberculosis, and is a most up-to-date history and full of the most recent and valuable suggestions. The next hundred pages is devoted to other diseases of the chest. These two

make up rather more than half of the book. In every article the best recent opinions seem to have been selected. Treatment is thoroughly gone into, and this of itself must be a great relief to many readers. Like the other volumes of this series articles are so arranged that the reader is constantly interested in the subject before him, and when he has finished it feels that many matters perhaps have been presented to him in such a forcible manner as to lead him to adopt measures, which although he may have heard of before, he never has seriously considered. A. J. J.

*Lucy of the Stars.* By FREDERICK PALMER. Toronto: McLeod & Allen, Publishers.

"Yes, you would bring something which kings cannot confer or millionaires buy, that little something in the nature which is lovable, that little something in the mind—found only in a woman's mind—which is the greatest charm of the universe." That charm has been caught and transferred to paper by the facile pen of Frederick Palmer, and his little heroine sings herself into the hearts of all with her quaint never care songs, just listen:

"If you have a heart afraid to play the game,  
Then that heart was meant for hanging in a frame; never  
care, never care."

*The Operating Room and the Patient.* By RUSSELL S. FOWLER, M.D., Surgeon to the German Hospital, Brooklyn. Philadelphia: W. B. Saunders Co. 1906. Canadian Agents: J. A. Carveth & Co., Ltd., Toronto.

A few years ago a distinguished surgeon, then President of the British Medical Association, after a visit to this side of the Atlantic, wrote that to see the best technique in antiseptic surgery one must perforce go to America rather than to British or Continental hospitals. What he saw and appreciated is better described in the work before us than in any other known to the writer of this review. Simplicity with efficiency, the elimination of the superfluous, the exact division of duties, so as to admit of or rather to promote the best "team" in the operating room—these are among the points which impress the reader on a first and rapid examination. Studied more in detail, we find compactly and clearly stated just those thousand and one things which are scattered in journals, and which when required are so hard to locate. No proceeding is advised which has not been amply tested and proved to have real value.

A thought which came to the writer as he turned the pages of



this book was that we have all been slow to see the real importance of many points now forming a part of every-day work. Take, for example, the use of rubber gloves. Sir Thomas Watson suggested these more than half a century ago, and Halstead has used them since '89, but only for the last half dozen years have they been generally recognized as eliminating the chief dangers of wound infection. It is quite safe to say that there is not a hospital in Canada in which better work will not be done if this book be obtained and rightly used. One may go further and claim that there is not a surgeon who will fail to receive benefit by such a review of his knowledge as its careful reading can afford.

N. A. P.

*Beverley of Graustark.* By GEORGE BARR McCUTCHEON, author of "Graustark," "The Sherrods," etc., with illustrations by Harrison Fisher. Toronto: McLeod and Allen, 1904. A crisp, bright tale for the physician's week-end jaunt.

The author takes us back to that wonderful little Duchy of Graustark, in the far east, with its placid valleys and rugged mountains, full of thrills and dangers. There the beautiful daughter of a Carolina Midas meets with numerous strange and hair-raising adventures, which holds the reader breathless with interest from the drop of the hat until he passes the wire.

W. H. P.

*A Compend of Operative Gynecology*, based on Lectures in the Course of Operative Gynecology on the Cadaver at the New York Post Graduate Medical School and Hospital, delivered by WILLIAM SEAMAN BAINBRIDGE, M.D., Adjunct Professor of Operative Gynecology on the Cadaver, New York Post Graduate Medical School and Hospital; Consulting Gynecologist, St. Mary's Hospital, Jamaica, L.I.; Consulting Gynecologist to St. Andrew's Convalescent Hospital, New York, etc. Compiled with additional Notes in Collaboration with Harold D. Meeker, M.D., Instructor in Operative Gynecology on the Cadaver, New York Post Graduate Medical School and Hospital; Assistant, Department of Gynecology Vanderbilt Clinic, College of Physicians and Surgeons, New York. 12mo. Cloth, 76 pages. Price \$1.00 net. New York City: The Grafton Press Publishers.

Practically this is a guide to operative gynecology as practised on the cadaver. The technique of operations is well described, and if a student would learn it by heart he would probably be fairly familiar with the operations herein detailed. Every young surgeon, particularly those practising in the country, will find this book of very great value, especially when called upon to perform

operations with which they are not very familiar, as it is such a perfect compend that a general idea of almost any operation can be obtained in five minutes.

A. J. J.

*Students' Handbook of Operative Surgery.* By WILLIAM IRELAND DE C. WHEELER (Mod.), B.A., M.D. (Dub. Univ.), F.R.C.S., Surgeon to Mercer's Hospital. Ex-demonstrator of Anatomy, Trinity College, Dublin. Dublin: Bailliere, Tindall and Cox, 8 Henrietta Street, Covent Garden. 1906.

This little treatise of 300 pages is well written and is a trustworthy guide for the student who is taking a course in Operative Surgery. The author does not profess to do more than supply a text book for student purposes and he has succeeded admirably in covering quite an extensive field; describing the technique of various operations in the different regions of the body in a concise and clear manner. The book will doubtless be found useful to those preparing for examination.

A. P.

*The International Medical Annual.* A Year Book of Treatment and Practitioner's Index. Contributors: Jos. Blumfield, M.D., Cantab.; Victor Bonney, M.S., M.D., F.R.C.S.; Prof. J. Rose Bradford, D.Sc., M.D.; Prof. A. H. Carter, M.Sc., M.D., F.R.C.P.; Frank J. Charteris, M.B., Ph.B.; Charles C. Easterbrook, M.A., M.D., F.R.C.P.; Ed. Jos. G. Emanuel, B.Sc., M.D.; E. Hurry Fenwick, F.R.C.S.; Fredk. Gardner, B.Sc., M.D., F.R.C.S.; Edward W. Goodall, M.D.; Wilfred James Hadley, M.D., F.R.C.P., F.R.C.S.; G. Armauer Hanson, M.D., Bergen; Robert Hutchison, M.D., F.R.C.P.; Priestley Leech, M.D., F.R.C.S.; Jas. Kerr Love, M.D.; Harold F. Mole, F.R.C.S.; E. Reginald Morton, M.D., C.M., F.R.C.S.; Prof. P. Lockhart Mummery, B.S., F.R.C.S.; Jos. Priestley, B.A., M.D., D.P.H.; Walther E. Rahte, M.D.; Philadelphia; Prof. Boardman Reed, M.D., Philadelphia; Prof. A. W. Mayo Robson, D.Sc., F.R.C.S.; G. W. Watson, Stephens, M.D., B.Ch., D.P.H.; Purves Stewart, M.A., Ed., M.D.; Geo. Fred. Still, M.A., M.D., F.R.C.P.; Prof. Ralph Stockman, M.D., F.R.C.P.E.; A. Hugh Thompson, M.A., M.D., M.R.C.S.; J. W. Thompson Walker, M.B., F.R.C.S.; Norman Walker, M.D.; Prof. Wertheim, M.D., Vienna; P. Watson Williams, M.D., M.R.C.S. 1906. Twenty-fourth Year. New York: E. B. Treat & Company, 241-243 West Twenty-third Street. \$3.00.

The present issue of the *International Medical Annual* is similar in bulk to the last issue, which was the first of the enlarged series. The names of the contributors are a guarantee of the high

quality of the articles in this volume. The first eighty pages are devoted to a dictionary of *Materia Medica* and Therapeutics.

The Dictionary of Treatment, arranged alphabetically, gives a review of medical and surgical progress for 1905, by many contributors, in 475 pages. Part III. contains some references to Sanitary Science. Though a little late in appearing this year, the *International Medical Annual* is as welcome as ever.

J. J. C.

*The Delineator for October.*—The strongest feature of the October *Delineator*, aside from the fashions, which are splendidly shown, is the opening of the Countess von Arnlim's new serial story, "Fraulein Schmidt and Mr. Anstruther." It is now publicly announced that the Countess von Arnlim is the author of "Elizabeth and her German Garden." The serial stories, "The Diary of a Baby," by Barry Pain, and "The Chauffeur and the Chaperon," by the Williamses, merrily continue. J. J. Bell contributes another "Wee Macgregor" episode, and other contributors of short stories the Ralph Henry Barbour, George Middleton, Florence E. Wilkinson and Ponnie A. Nedwill. John Vance Cheney is represented by a poem, "Hallowe'en." The kitchen department, under the direction of M. Jean Marie Devaux, presents the second course of "A Perfect Dinner," some "Recipes for Cooking Game," more "Favorite Recipes of Famous People," and seasonable advice about peppers, melons and grapes; the continuation of "A Culinary Dictionary," and the beginning of a series "Around the World in Eighty Dishes." Seasonable suggestions for entertainments may be found in "The Practical Side of Amateur Theatricals," by Sarah Comstock, "A Paper Party," and "Hallowe'en Merrymaking for Girls and Boys." Subjects of vital importance are treated in the papers, "Coloring a Life," by Lida A. Churchill, "The Art of Pleasing," by Edgar Saltus, "More Courtship After Marriage," and "A Royal Road to Perfect Memory," by William George Jordan. The departments, "The Money-makers" and "The Wisdom of Many" contains many original, as well as sensible ideas.

*A Non-surgical Treatise on the Diseases of the Prostate Gland and Adnexa.* By GEORGE WHITEFIELD OVERALL, A.B., M.D. Chicago: Rowe Publishing Co. 1906. pp. 228.

The title of this book is a misnomer. The writer would have all surgical procedures restricted to the use of the knife. The curious fact is that he is an ardent exponent of the theory that prostatic hypertrophy can be cured by cataphoresis and he would have us believe that his method is the only salvation for the unfortunate sufferers from prostatic disease. It may be in one sense that his methods are non-surgical because they are possibly non-scientific, but on no other ground can he designate his treatment "non-surgi-

cal." He entirely overlooks the brilliant results which have been attained by supra-pubic prostatectomy in properly selected cases and has the effrontery to state that the results of such procedures "have been either utterly unsatisfactory or at least equivocal." It is impossible and unnecessary to discuss the attitude assumed by one so absolutely ignorant of the magnificent results which have been obtained by operative methods in this field of surgery. Whatever may be said for cataphoresis as a method of treatment we may assume that the profession are sufficiently experienced or sufficiently well informed regarding the operation of prostatectomy to prevent them being misled by such seemingly absurd statements.

A. P.

*Heart Disease and Aneurysm of the Aorta.* By SIR WILLIAM II. BROADBENT, Bart., K.C.V.O., and JOHN F. H. BROADBENT, M.D., F.R.C.P. Fourth edition. London; Baillière, Tindall and Cox. 1906.

That a medical book should have reached the fourth edition in nine years is strong evidence in its favor. Broadbent's *Heart Disease* would appear to be the work of careful, observing, clinicians. It is popular with practitioners and justly so.

In the fourth edition John F. H. Broadbent has re-arranged the subject matter and has added chapters on the pulse, disease of the coronary arteries, bradycardia, and atheroma of the aorta. He has also re-written the chapters on acute and pernicious endocarditis, the chapters on affections of the myocardium and that one on affections of the pericardium.

Sir William Broadbent has made additions to the chapters on angina pectoris and functional disorders of the heart.

This work evidently represents the first-hand experience of skilled observers of heart disease, men who speak with authority.

J. J. C.

*Ellis's Demonstrations of Anatomy*, being a guide to the knowledge of the human body by dissection. Twelfth edition. Revised and edited by CHRISTOPHER ADDISON, M.D., B.S. (Lond.), F.R.C.S., Lecturer on Anatomy, Charing Cross Hospital, Medical School; formerly Hunterian Professor, Royal College of Surgeons, England; Examiner in Anatomy, Royal College of Surgeons, England, etc. Illustrated by 306 engravings on wood, of which a large number are in colors. Octavo volume, 861 pages. Price, muslin binding, \$3.50 net. New York: William Wood & Company, Publishers. 1906.

It is not necessary to review in detail this well-known text book. Suffice it to say that among all the books which have appeared in recent years as practical guides to the dissection of the human body, and many excellent ones have been published, we know of no better

than that entitled "Ellis's Demonstrations of Anatomy." The present edition has been thoroughly revised and brought up to date by Christopher Addison, M.D., B.S. (Lond.), F.R.C.S. We can recommend the book without any reservation as one of the best guides to practical anatomy available. A. P.

*Comparative Otology—Surgical Pathology and Treatment of Diseases of the Ear.* By CLARENCE JOHN BLAKE, M.D., Professor of Otology in Harvard University, and Harry Ottridge Reik, M.D., Associate in Ophthalmology and Otology, Johns Hopkins University. New York and London: D. Appleton & Co. 1906. Canadian Agents: Geo. W. Morang Co., Ltd., Toronto.

This is not a review of the literature of the subject, but rather a record of individual experience, and therefore so much the more valuable, for nowadays medical books which are records of individual experience are few and far between. Its aim is practical utility: this, with an evident desire to present the subject as simply as possible, has led to a book which is not beyond the student, but is of value to him, the general practitioner and the specialist. We commend it for its clearness of statement, scientific accuracy, and some clinical judgment. J. M.

*The Autotoxicoses: Their Theory, Pathology, and Treatment.* By HEINRICH STERN, Ph., M.D., New York, Professor of Special Medical Pathology and Therapy in the College of Physicians and Surgeons, Boston; Director of the Institute for Medical Diagnosis and Research in the City of New York; Physician-in-Chief Philanthropin Hospital of the City of New York; Pediatricist and Pathologist Misericordia Hospital and the Hartsdale Infirmary; Consulting Physician Metropolitan and Red Cross Hospitals; Chairman Section on Pharmacology American Medical Association; Permanent Member Medical Society of the State of New York; Fellow New York Academy of Medicine, etc., etc. Chicago: G. P. Engelhard & Company. 1906.

Dr. Stern objects to the off-hand diagnosis of autointoxication so common at the present time. He has recognized the difficulties of making such a diagnosis in a great many cases, and in the present work he endeavors to place the subject on a more rational basis.

The first part of the book treats of autointoxication in its various forms. The author draws a clear distinction between "toxicoses" and "autotoxicoses," and shows that differential diagnosis between enterogenous autotoxicoses and ectogenous toxicoses is often impossible.

The second part of the book is devoted to the therapy of auto-intoxications. As one might expect in a work of this kind, there are a great many therapeutic suggestions of great interest. On page 168 we find a specific influence attributed to vaccine virus upon catabolic nucleolysis, and the statement that a successful vaccination almost always promptly disperses "lithemic" conditions not due to the mode of living, that the "heavy limbs," mental depression and pain vanish, the natural vigor returns and body weight increases in emaciated individuals. Again on page 177 we find that arsenic taken with thyroid prevents the deleterious effects of the latter. The work is rather difficult to follow at times owing to its technical nature, but the author has included a glossary to help out in this respect. It is a work of 221 pages, including glossary, references and index.

J. J. C.

*The Health-Care of the Baby—A Handbook for Mothers and Nurses.* By LOUIS FISCHER, M.D. 12mo., Cloth—166 pages. New York and London. Funk & Wagnalls Co.

This book contains many useful hints as to the management of the babe in health and disease. Details as to ventilation, clothing, bathing, etc., which every mother and nurse should know all about. The most important subject treated of is Infant Feeding, more particularly when the stomach and bowels are out of order. Some suggestions in cases of injury, poisoning and the numerous accidents which all children are more or less prone to, and the management of bad habits in children, are all of value.

Every mother as well as every nurse should know all that this book contains, and the subjects are so arranged that any particular point can be picked up at once.

A vast majority of young doctors could read this little book with immense advantage, and find as a result that they had a groundwork of most necessary, and none the less valuable because "simple" data, upon which to build from more extensive text-books.

*Treatise on Diseases of the Skin,* for the use of advanced students and practitioners. By HENRY W. STELWAGON, M.D., Ph.D. 4th edition, thoroughly revised. Philadelphia and London. W. B. Saunders & Co. Canadian Agents, J. A. Carveth Co., Ltd., Toronto.

The branch of Dermatology now occupies such an important position in the various medical colleges that a work in diseases of the skin is always of great interest, not only to students, but to the entire medical profession. Stelwagon's "Diseases of the

Skin" is now upon the fourth edition, and no doubt will prove more popular than ever.

The manner in which the author divides the subject is most practical as well as scientific. The chapter of the histology and physiology of the skin is exceedingly clear, and by the aid of the plates is greatly simplified.

The part on "General Remarks of Treatment" is of valuable assistance to practitioners, as the most modern methods of treatment are taken up and many excellent suggestions given. The electrotherapeutic treatment by means of X-ray, high frequency current and Finsen light has been thoroughly discussed in a manner which will be of much aid to all in treatment of diseases of the skin.

The work simply must be read to be appreciated, for the general manner of description is clear and thoroughly practical, and a subject which has many difficulties is greatly simplified.

D. K. S.

*Forthcoming Books.*—The Cleveland Press, Chicago, Ill., ask us to announce that the following books will issue from their press rooms in the immediate future. They include: "Hospital Organization," "Hospital Construction," "Hospital Management," "The Technique of Modern Operations for Hernia," by Alex. Hugh Ferguson, M.B., M.D., Prof. of Clinical Surgery, University of Illinois. "A practical Guidebook on Every Day Surgery and Surgical Handicraft," by A. Hamilton Livings, Prof. of the Principles and Practice of Surgery in the Wisconsin College of Physicians and Surgeons. "Practical Dermatology," by Bernard Wolff, M.D., Clinical Professor of Diseases of the Skin in the Atlanta College of Physicians and Surgeons.

*Treatment of Gonorrhoea in the Male.* By C. LEEDHAM-GREEN, M.B., Heidelberg, F.R.C.S., London, senior surgeon to the out-door patients, Queen's Hospital, etc. Bailliere, Tindall & Cox. J. A. Carveth & Co. 1906. Price \$1.50.

This is a monograph of 150 pages, upon the treatment of gonorrhoea, based upon the pathology and anatomy of the parts.

The line of treatment, essentially a careful management of each case, follows from the anatomical diagnosis accurately localized. Specifics and abortives are given over to the careless diagnostician.

References are made to many foreign authors, whose publications would be unlikely to come within the reach of the average practitioner.

The involvement of the prostate, the proof of cure, and its

relation to marriage, are some of the many features of this book.

Its great value does not lie in new ideas, because there are none to be given, but in its scientific soundness, clearness, and practical application. It ought to be of great assistance to every practitioner.

A. J. J.

*Osborne's Introduction to Materia Medica and Pharmacology.*

An introduction to the study of *Materia Medica* and *Pharmacology*, including the Elements of Medical Pharmacy, Prescription Writing, Medical Latin, Toxicology and Methods of Local Treatment. For the use of Students of Medicine and Pharmacy. By OLIVER T. OSBORNE, A.M., M.D., Professor of *Materia Medica*, Therapeutics and Clinical Medicine in Yale University, ex-President of the American Therapeutic Association, etc. In one 12mo vol. of 167 pages. Cloth, \$1.00 net. Philadelphia and New York. Lea Brothers Co., Publishers. 1906.

The object of the author is to introduce the student to the study of *Materia Medica* and Therapeutics from a practical standpoint. There is a short section on Experimental Pharmacology; another on the action of Important Drugs. There is a dosage table, and a section on poisons, weights and measures and Latin abbreviations. A useful book of its kind.

A. J. H.

*New Serum Therapy.* By D. MONTGOMERY PATON, L.R.C.S., and L.R.C.P., Ed. Price, \$1.75. London: Bailliere, Tindall & Cox, publishers. Canadian Agents: J. A. Carveth & Co.

The *New Serum Therapy*, by Montgomery Paton, forms a book of interesting reading, and whether we agree with his conclusions or not it opens up a comparatively new field for therapeutical investigation.

The author of this book does not claim that he is the discoverer of a new remedy or even of a new method of administering an old one, but he has undoubtedly pushed and extended the use of the serum treatment to many diseases for which it had not previously been used and claims results that are astounding, and we only hope all practitioners may be able to bear testimony to his claims.

His method of administration is orally and he holds that thus administered it is as effective or more so than when given hypodermically. The writer makes the emphatic statement that if antidiphtheretic serum is administered properly and in time it is a specific for all inflammatory conditions of the first stage, that is before the tissues have broken down and pus formed. Antidiphtheretic serum will cure all inflammatory conditions ex-



cept tubercle syphilis, pneumonia, gonorrhœa, malaria and locomotor ataxia. The list of cases cured by him included the following: Acute bursetes, pain relieved and fever gone by three doses. Felon from poison of finger-wound, extending to axillary glands, cured in four days. Quinsy, pleuresy, phlegmased alla dolens, peritonitis. (Appendicitis, pain and vomiting relieved by a single dose, cured by 30 doses.) Arthritis deformans, broncho pneumonia, cholecystitis, diphtheria, erysipelas, dysmenorrhœa, endomembritis, menorrhagic salpingitis, acute nephritis, and cerebrospinal meningitis. In midwifery, sepsis mostitis. Rheumatic polyarthrititis, acute neuritis and tritis, skin diseases, furuncle, acne vulgaris, eczema and panphigus, tonsillitis and rhinitis, and signovitis and joint inflammations.

The theory of cure is that the Serum restores the blood vessels, giving its muscular elements tone and a resisting power against the invasion of microbes. His plan of treatment is simple and is practically the same for all diseases, and is as follows:

"For acute conditions, 1 drachm of Serum alone, and every half hour or hour for three or four doses. Then every two or four hours as required. For less acute cases, 1 drachm four times a day is generally sufficient." The Antidiphtheretic Serum used is 6,000 units to the ounce, 1 drachm doses as above.

Expense will be the only thing to prevent the testing of each and every example cited by the author. J. H.

*Study, Treatment, and Prevention of Tuberculosis. Second Annual Report of the Henry Phipps Institute, Philadelphia.*

This extensive report of four hundred and fifty pages opens with a full account of the work of the year by Dr. Flick, the Medical Director. "To restore these poor people to health without material aid is out of the question. To keep them well without material aid after they have been restored to health is almost equally hopeless. Occasionally one gets well who can stand alone and maintain his health through his own resources. Most of them, however, go under unless assisted." "The good comes from the prevention which is brought about. Treatment of these poor people and prolongation of life give opportunity to teach those, who have the disease and those about them methods of prevention. The fruit of the labor is in the saving of those who are still in health."

The autopsy findings in the various organs are then given in detail. A very full report on the method of production and use of Maragliano's serum follows. The results from its use were not favorable. Much experimental work on immunization of animals against tuberculosis was done, and the lengthy report of the processes and results forms an interesting section.

The Henry Phipps Institute is the most important institution on this continent for research work in tuberculosis, and for carrying on charitable work among the poor. It is thus both an admirable charity and a scientific institution, whose aim is to extend our knowledge of the conditions which restrict the spread of infection.

A. M. P.

*The Diseases of the Nose and its Accessory Sinuses.* By H. LAMBERT LACK, M.D. (London). F.R.C.S., Surgeon to the Throat Department of the London Hospital; Surgeon to the Golden Square Throat Hospital. 124 illustrations. London: Longmans, Green & Co. 25 shillings. 1906. Canadian Agents, J. A. Carveth & Co., Ltd., Toronto.

As an example of what a medical book ought to be in the matter of paper, printing, excellence of illustrations, this may be commended to the attention of American publishers. The excellence of the bookmaking is merited by the worth of the book itself. Pathology and treatment are its strong points. Too often "treatment," as given in the text-books, bears the earmarks of want of experience, but here one constantly runs across what the English student calls "tips," which are most valuable. We venture to predict that this will be a favorite of practitioners and students.

J. M.

*Manual of Diseases of the Ear, Nose and Throat.* By JOHN JOHNSON KYLE, B.S., M.D., Clinical Professor of Otolaryngology, Rhinology and Laryngology in the Medical College of Indiana, Department of Medicine of Purdue University. Philadelphia: P. Blakiston's Son & Co. 1906. Ontario Agents: Chandler, Ingram & Bell, Ltd., Toronto.

One is particularly struck with the amount of material in this manual. On taking it up one expects to find the usual shortcomings of the manual. The embryology, anatomy and physiology of the ear, nose and nasal fossae, accessory sinuses, nose and throat bacteriology and pathology of the ear, nose and throat are all dealt with in separate and satisfying chapters. To methods of examination and therapeutics are devoted seventy-five pages. The modern advances in the treatment of deviations of the septum and of diseases of the accessory sinuses are well dealt with. Much information heretofore found only in the columns of special journals has been incorporated in the work.

J. M.