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CANADA
MEDICAL RECORD

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Original Communications.

**NOTES ON VARICOCELE CIRSOCELE; ITS
PATHOLOGY, CLINICAL HISTORY AND
TREATMENT.***

By THOMAS H. MANLEY, M.D., NEW YORK.

Professor of Surgery at New York School of Clinical Medicine.

Something more than a year ago, it was my privilege to submit here a few brief notes on the pathology and therapy of hydrocele, in the male and female.

It will be my purpose on this occasion to call your attention to another important group of lesions involving the inguino-scrotal areas, which have their seat in the vascular elements of the different vessels of the testis and the parenchymatous substance of the gland itself.

In the beginning, it is important to note, that the vascular apparatus of the spermatic cord presents several unique features, in order to adapt itself to the demands of the economy, in the full exercise of the function of generation.

For example, we will find that the parenchyma of the testicle is supplied by one artery only, while the number of emulgent veins comprising the leash of vessels, known as the pampiniform plexus, is very large.

Nature has not only provided a numerous supply of return vessels, but in order to fulfil necessary requirements, in periods of excessive activity and to overcome the influence of gravity, has endowed them with marked distensile properties, and unusually thick investments; for under the microscope we will at once observe that the muscularis is as thick as in the arteries anywhere in the body, of the same calibre.

* Read before New York Celtic Med. Society, April 8, 1897.

We have evidence that the spermatic cord conveys numerous filaments from the sympathetic system of nerves. These are lodged in the loose, myxomatous tissues, which constitute the interstitial frame-work of the cord.

Everyone who has had much experience in hernial operations has noted the common tendency of the fine thread-like element of the cord to pass down in the most diverse directions, by the peritoneum, and become so intimately blended with its areolar investment as to be often isolated with difficulty.

If we critically examine the anatomical elements of the cord, it will be observed that they are often, in places very intimately fused together, the sperm-duct, the blood vessels, nerves and lymphatics. As we approach the inguinal canal, where the internal veins have nearly all converged, they become larger, and less characteristic, and the tubular structures of the cord are more independent and readily separated.

Cirsocele or varix of the internal spermatic veins presents pathological changes and clinical features quite unique and characteristic.

In advanced or aggravated cases, there is marked atrophy of the cremaster muscles, with a descent and dragging of the testis. Owing to recurring phlebitis and periphlebitis, the spermatic tributaries undergo great thickening, become tortuous, spiral and sclerosed; the overlying nerves and lymphatics undergo severe tension and compression; the nutrition of the testicle is interfered with and under many circumstances an impeded spermatic circulation is the initial step to several consecutive and ulterior changes in this organ.

As internal spermatic veins are in no manner connected with the scrotal vessels, the dartos or other overlying parts are not involved. There are no atrophic dangers as seen in saphenous, vulvar, or hemorrhoidal varix. On the contrary, there is a true hypertrophy of all the cutaneous elements, especially in the elastic felting of the corium, which now elongates and thickens to support the enlarged pendulous testis, deficient in muscular support.

It will be generally observed, that varicocele is unilateral and is an infirmity which becomes manifested at an early date and after sexual activity commences, and hence the reason why it must be regarded as a disease of early life.

CLINICAL MANIFESTATIONS.

Roddick observes that "the mental condition of many of those suffering from varicocele is peculiar. Its presence has often a most depressing influence and I know of few affections in which the attention of the person is concentrated upon his malady as this." (*Can. Med. Journal*, June, 1884.) This short paragraph very laconically gives us the clinical picture. As the author well observes the constant weight of the scrotum and the perpetual aching pains up along the cord and down the thighs, tend to direct his thoughts to his ailments, and his life is in consequence rendered miserable.

This class *par excellence* provides rich game for the charlatan and the quack, who picture to him in their trashy tracts the evils in store for him if he neglect their infallible remedies. As a matter of fact, however, their sufferings are real and of a dual character. First, from the effects on the local parts and secondly through the effects of the reflexes on the brain. Psychological disturbances are sometimes most accentuated and distressing. Howe has recorded the case of a man with cirsocele, whose mind was rapidly giving way under the morbid influence of the disease; but who in twenty months after operation and care, was entirely restored to mental vigor. He said: "We have evidence of great good having been done in these cases by operation, not only in curing the varicocele, but restoring a mental state which bordered on insanity."

It should not be over-looked, that in all these cases, there is a sympathetic irritation of the sound testicle, and the functions of generation are most decidedly impaired. There is a certain degree of impotence present. Azoo-spermatorrhœa is not uncommon, and the patient will sometimes complain of emissions with very imperfect erections.

If we examine the prostate and the seminal vesicles in these cases, we will find a marked tenderness. The urethra participates in this excessive sensitiveness, especially in the membranous portion, and with few exceptions complaint is made that the force of bladder-expulsion is markedly weakened.

It has long been noted that the symptoms emanating from a varicocele, or enlarged spermatic veins, bear but little

relation to the size of the varix ; or in other words that one may suffer as much or more, from a small as a large mass. This is a clinical feature peculiar to enlarged veins in any situation, because pain only attends their presence or evolution, in the presence of inflammation or phlebitis.

It therefore follows that we should bestow as much attention on the minor cases, as those of massive proportions. And further if we can only see those early, before the larger tributaries are involved, the infirmity may be cured before complicating elements present themselves.

TREATMENT, PALLIATIVE AND RADICAL.

In the greater portion of simple, uncomplicated varicocele, the source of no inconvenience, the simplest and safest therapy is the best to be approved. Abstinence from excessive venery, masturbation, too long standing, or violent athletic exercise should be observed. Daily bathing of the scrotum, with an elastic scrotal supporter, removed every night, will suffice in most cases.

It is only when the enlarged veins give rise to pathological symptoms, to marked diminution of virility, to pained heat, or a sense of weight in the scrotum, that the radical measures of treatment of a surgical order are to be considered.

And in this respect, it may be laid down as a rule, that the operation or measures of treatment which entails least mutilation or division of the tissues is the better. In my own experience, excision of the redundant scrotum is very seldom called for. With cocaine locally applied we can usually painlessly perform the necessary manipulations. Needle-electrolysis, ligature, or excision of the vessels is not difficult. Few if any have to lay up during treatment.

CONCLUSIONS.

1. Varicocele or phlebectasia of the spermatic cord is an infirmity of early life ; its evolution being contemporaneous with the advent of sexual activity.

2. Pathologically, while the vesicular inertia, dilatation, thinning, sclerosis, or thrombosis, are quite indetical with varix in other situations, in this instance, an organ intimately associated with vital processes with procreation and individuality is involved, we have severe local symptoms with

reflex disturbances made manifest through psychic derangement.

3. Spermatorrhœa, azoo-spermia, limited impotence, urethral irritation and vesical incompetence are not unusual concomitant conditions, and in all protracted cases, the testicles are consecutively the seat of organic changes.

4. The pathologic mutations which give rise to the most concentrated distress, are a localized phlebitis, periphlebitis, tension and pressure on the medullary and sympathetic nerves, which are sometimes as pronounced in the incipient as in voluminous varicocele.

5. As this condition is not uncommonly associated with rupture, present or impending, the relief of this is something of the highest import, even by operative procedures, as a truss only aggravates the condition, if it does not sometimes induce it. Bathing, massage, electrolysis and support should be always thoroughly tried, as curative agents first; then, if pain still persist, ligation, excision, or divulsion under cocaine, is prompt and effective as a radical cure. In all but unusual cases the patient remains at his usual occupation.

SHOCK AFTER ABDOMINAL OPERATIONS AND HOW TO PREVENT IT.*

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The inspiration to write this paper was derived from a remark made at our last meeting by one of our most distinguished surgical members that we did not know exactly what shock is. As my own views as to the nature of shock have assumed a very definite form during the last year or two, I now place them on record with the hope that they may lead to a better general understanding as to what shock really is, and how best to prevent it. If by so doing my own or some other operator's death-rate should be reduced by even one per cent., I would feel quite satisfied that my labor had not been in vain.

As I mentioned at the meeting referred to, the word

*Read before the Medico-Chirurgical Society of Montreal, February 26, 1897.

shock has long been employed to cover a multitude of sins. This is especially the case in abdominal surgery, and as most of my experience has been obtained in this department of our work, my remarks will especially apply to shock after abdominal operations; although what is true of them is true also, in a lesser degree, of the surgery of the thorax, brain or limbs.

Properly speaking the term shock should be applied only to a vivid impression or powerful irritation of the great sympathetic nerve leading to a forcible contraction of the arterioles of the surface and throughout the body, including the cerebro-spinal system, and a corresponding rush of blood into the great venous trunks, especially in the abdomen, which we know are capable of holding all the blood in the body.

As an instance of non-surgical shock, might be mentioned the effect of some horrible sight upon the great sympathetic nerve in women, in whom this nerve is more highly developed than in men. The arteries of the skin contract and it becomes pale, and the body surface becomes cold; the arteries of the brain contract and for want of blood it ceases to act, the woman becomes unconscious and swoons. And yet nothing has touched her except the rays of light from the horrible object or ghastly sight which have fallen upon her retinae.

As an instance of surgical shock might be mentioned a moderate blow upon the testicles or abdomen, which is followed by deathly pallor and insensibility to painful or other impressions. If the abdomen were to be opened just at this time the arteries would be found partially emptied, although the patient has not lost a drop of blood; the latter having poured into the large veins. At the moment of tying or cutting any large trunk of the sympathetic, such as happens in the removal of the ovaries or testicles, this impression of the whole sympathetic takes place to some extent as those who are watching the pulse have often remarked to me. The pulse grows fast and the face becomes pale, but only for a moment, the spasm of the arterioles being quickly followed by a relaxation or paralysis, leading to flushing and slowing of the heart's action. Another instance in which the term

shock can be less correctly applied is when a very large quantity of fluid or a very large tumor is suddenly removed from the abdomen, the support which the abdominal veins have in the course of months or years gradually grown accustomed to is thus taken from them. There is a rush of blood into these unsupported veins, and the same phenomena are observed as when the great sympathetic is irritated. And yet this is not really shock, because it is not a nervous condition but more truly a hemorrhage. This variety of shock, which has killed many a patient in former times, when large tumors were plentiful, can be easily prevented in several ways; first by removing gradually the pressure to which the veins have been accustomed, by emptying very large cysts when possible on the day previous to the operation, by tapping with a small trochar, as I did on one occasion in an old lady from whom I extirpated two large carcinomatous ovaries weighing five or six pounds each, and who was besides greatly distended with ascitic fluid; two buckets of water were removed in two hours without any inconvenience, and next day the operation was performed absolutely without shock, the patient speedily recovering from the operation. When the tumor is solid and cannot be lessened in size by tapping, there are two other means of preventing this form of shock, or hemorrhage into the veins. One is by performing these abdominal operations with the patient in the Trendelenburg posture, so that the blood from the limbs and even from the abdominal veins, may flow by gravity towards the heart and brain; and the other by filling the abdominal cavity, immediately on removing the tumor, with normal salt solution, which not only supports the thin-walled veins, but also, by osmosis being absorbed, so fills the vascular system that the abdominal veins may be filled with impunity. Still two other methods have been employed in my cases with advantage: one being to have an assistant trained to transfer normal salt solution, one teaspoonful to the pint, directly into the median basilic vein; the other, which I employ almost constantly, to gently inject a quart of normal salt solution into the rectum with a fountain syringe, hung only a foot or two higher than the rectum, so that, entering slowly, the liquid may be tolerated and absorbed, which would not be the case if it were injected quickly.

As a preventive measure, it is, I think, important to send our patient onto the table with the vascular system well filled by inducing them to drink large quantities of water *alias* beef tea and chicken broth, on the day or two before the operation, so that the inevitable loss of blood will not be too greatly missed. This brings me to the point where I wish to enforce my deliberate conviction that the majority of deaths from so-called shock are really due to hemorrhage; either before the operation, as in ruptured tubal pregnancy; during the operation, as in removal of segments of intestine, and of tumors bound down and surrounded by many and vascular adhesions; or hemorrhage after the operation, owing to slipping of ligatures off their stumps, or the slipping of the artery off of the ligature, by retraction. I have had one or more deaths from each of these causes, and it is with regret, not however unmingled with hope, that I confess that they were all preventable, and that they will probably never occur again in any patient of mine. If we know anatomy we can find the arteries and tie them before cutting them. In my last case of total abdominal hysterectomy for cancer, the two ovarian, the two uterine and the two round ligaments, which sometimes bleed a good deal, were felt for and tied individually before cutting the broad ligaments, so that the uterus was removed without the loss of as much as four ounces of blood, and there was a total absence of shock, the pulse being just as good at the end of the operation as it was at the beginning. The same method should, I believe, be applied to all surgical operations involving the cutting of arteries, to tie all the principal sources of blood supply before cutting; if this were done, many of the most bloody operations would become almost bloodless, and death from so-called shock would become almost a surgical curiosity.

Some physiologists may here raise the objection that deaths from operative shock are known to have occurred where the quantity of blood lost was not more than is frequently lost with impunity from non-operative hemorrhages. A woman, for instance, may lose three quarts of blood in three weeks from a bleeding fibroid every month for several years, and is still able to go around and attend to her duties; and yet at the operation for removal of the tumor and uterus

she may lose exactly the same quantity of blood in five minutes, causing her death upon the table. Although the physiologist may tell us that she has died from shock, she has really died from hemorrhage. With the same loss of blood the patient's life may be lost or not according to how long a time the hemorrhage is spread over; in the former case she is losing only nine and a half drops in five minutes, a quantity which she can easily replace, while during the operation the whole three quarts may be lost so quickly that the arterial pressure falls so low that no blood is forced into the coronary arteries, and the heart muscle stops for want of food. This is why the heart will not beat when there is only a small quantity of very rich blood in the arterial system; and why it will beat indefinitely if the arteries be full of the very poorest quality of watery blood. Teachers of physiology do not perhaps lay sufficient stress upon this fact when teaching the functions of the heart; if they did there would probably be fewer deaths from what is often called shock. Many patients go on the operating table with almost empty coronary arteries, who might have them filled beforehand by the means already mentioned; while other patients who die during the operation, or soon afterward from empty coronary arteries, might be saved by filling the abdomen or even injecting the veins with normal warm salt solution. It is of great importance in abdominal operations that the intestines be thoroughly emptied in order that they may be out of our road while operating, and also that it may not be necessary, owing to their distension, to turn them out of their natural cavity; but in emptying the intestines with cathartics, especially with saline solutions of greater density than the blood, we must take care at the same time not to empty the coronary arteries of the heart. I have dwelt at some length upon the circulatory changes which lead to so-called shock because I believe that there is in certain quarters too great a tendency to attribute most of the ills that flesh is heir to to disorders of the nervous system. With but few exceptions the nerves are never any better than what their blood supply makes them; and so the beautiful ganglia of the heart and the still more wonderful structure of the brain are absolutely useless without a constant supply of blood. There is another cause of shock

which is not always sufficiently recognized, namely, prolonged anæsthesia. On the one hand we know that shock is a depression of the vital functions, while on the other we have the original investigations of Dr. Gordon Campbell, a distinguished member of this Society, which prove that the vital functions begin to fail from the first moment that anæsthesia begins. By the careful analysis of urine drawn at the end of each hour he has shown that the quantity of urea diminishes, which is just exactly what we might expect; for life is merely combustion, and like every other fire goes out when its supply of oxygen is shut off or is replaced by carbonic dioxide. Can any one say that this does not occur with the Clover inhaler and, indeed, to some extent with any inhaler? How can it be otherwise when the patient receives but two breaths of air in every three, and not good air at that; not fresh country air or even deteriorated city air; not even the bad air of the hospital, but the worst air of all, that of a crowded operating-room; two inspirations of air and of ether, and this during several hours, sometimes. Is it any wonder that the vital fire burns low and that urea decreases? This, I presume, is inevitable, unless some anæsthetist genius should devise a plan to provide the patient with a life-sustaining anæsthetic mixture of oxygen and ether. From that moment my objection to the Clover inhaler would cease, for our investigating member will then find, when he analyses the urine, that the uric acid has disappeared and that the urea has increased. Until that time comes it is our duty to cut down the duration of the anæsthesia by every means in our power, saving here a minute and there a minute wherever it can be done without neglecting the minutest details of asepsis and hæmastasis.

When I heard of the low death-rate of Joseph Price and Howard Kelly I lost no time in placing myself under their instruction, and I soon perceived that rapidity of operating played no small part in their success. In the case of the latter, who was surrounded by skilled assistants, every operation being a continuous performance, there being at no time any consecutive five seconds without something being done; and it is evident that ten or twelve hands can do the same work in less time than only two, be they ever so skillful. I have tried to imitate him at the Samaritan Hospital, and for

what measure of success I have had there I wish to tender my gratitude and praise to my faithful assistants, whose only reward has been the experience they have gained. But I wish once more to make my meaning clear that I am advocating speed, not carelessness in operating. How many operations I have seen, my own in former days among the number, where useless conversation distracted the attention of nurses and assistants, by which second after second was lost in handling ligatures and instruments. For my own part I would like, if it were possible, that all in the room except the patient would hold their breaths until the anæsthetic has been removed. How I envy the military discipline which pervades the German operating-rooms, where a single whisper is regarded as the grossest breach of etiquette. How I dread the well-meaning fellow who tells a funny story or relates an interesting case, or tells me how to do the operation; if he realized how much he has to do with death from prolonged anæsthesia he would surely hold his peace.

There is another and most important cause of shock, and because of its effect upon the nervous system it causes true shock, namely, prolonged exposure and handling of the intestines. As I have already hinted, this accident occurred more often formerly than now because we take such infinite pains to have the intestines empty and out of sight: not only must they be empty of solids and liquids, but they must also be free from gas, so that they lie collapsed at the back of the abdomen. When thus prepared, and with the patient in the Trendelenburg posture, they will be near the diaphragm and quite out of sight. This ideal condition of the bowels can only be obtained by careful dieting, careful catharsis and by the free use of strychnine. I learned of the surpassing value of strychnine in abdominal surgery at the San Francisco meeting of the American Medical Association, and now I do not know how I could get along without it. Since I have used it the bowels are rarely seen, and if seen they are never touched or handled, a hot sterilized towel being placed upon them at the beginning of the operation and not removed until the end. We are frequently requested to perform a serious operation on the same day that the patient arrives in from the country, so that the family physician and friends

may get away by the afternoon train, with the knowledge that the dreaded ordeal is over; it need hardly be said that it would be rash to do so; all these cases should be in bed in a public or private hospital at least three days beforehand; otherwise we may impart shock from exposure and handling of the intestines.

One more common cause of shock and I shall have done. During prolonged operations, while the patient is surrounded with towels wrung out of hot antiseptic solutions, there is sometimes great cooling of the body temperature. As has been already said, the body furnace is burning low because not only is the damper closed but the fire is choked with carbonic dioxide, so that in addition to the wet cloths another serious factor of vital depression is added, namely, the cold sweating which always accompanies carbonic acid gas poisoning. This sweat turns into vapor as does the water spilled upon the patient, and evaporation is always accompanied with loss of heat. Under these conditions there must be, if not genuine shock, at least great lowering of vitality. It can be avoided by covering the patient with a sterilized rubber sheet with an opening in the centre, and upon this the sterilized or antiseptic towels are placed, so that no drop of water gets upon the patient's clothing; and secondly by having zinc pans made the size of the operating table about two inches thick, which are previously filled with hot water, so that the patient's temperature may be kept up. When the water becomes cool during a long operation a few gallons are drawn off from an opening underneath and as much hot water added by an opening on the top, all of course without delaying the operation for a single moment. I made this suggestion about three years ago to my late lamented friend, Professor Fenwick, of Kingston, who at once carried it out, and I saw it in use in his operating-room shortly before his death. The diagnosis between shock, hemorrhage and sepsis is beset with difficulties, because they are so often complicated, one with the other; but this alone would occupy the time allowed for a paper. I might just say that the low temperature and rapid pulse of shock alone take place on the table, and quickly improve when the patient is placed in bed and surrounded with hot bottles. A fast pulse without a low

temperature means hemorrhage ; a fast pulse with a rising temperature generally means sepsis ; if the hemorrhage is going on the pulse will grow softer and more rapid ; in sepsis it will grow stronger, or at least maintain its strength. As a rule the temperature will help us but little, our main reliance being placed upon a careful study of the pulse before and after the operation.

CONCLUSIONS.

To sum up : shock is a powerful irritation of the great sympathetic, causing anæmia of the brain and heart and lowering of temperature.

2d. The same results may be obtained by too much blood being lost during an operation owing to defective hæmastasis.

3d. The same results may be obtained by hemorrhage into the abdominal veins by the sudden removal of large tumors or quantities of ascitic fluid.

4th. Shock is often due to prolonged anæsthesia in a badly-ventilated room. Not a moment should be wasted during anæsthesia.

5th. Depression of vital powers may also be due to prolonged exposure in wet clothing ; the patient should be kept warm and dry.

6th. Anæmia of brain can be prevented by operating in Trendelenburg posture ; anæmia of heart can be prevented by having the arteries well filled before the operation, and by filling the abdomen with normal salt solution during the operation, or by rectal enemas of salt solution after operation.

7th. The administration of strychnine in doses of one-twentieth of a grain for three days before and three days after the operation diminishes danger of shock, partly because it keeps the intestines contracted and thus saves them from being handled ; partly because it stimulates even a badly fed heart to contract.

8th. Important organs, such as the uterus, or kidney, or even large segments of intestines, can be removed almost without shock provided the operation is performed quickly, with little hemorrhage, and without much handling or exposure of the intestines.

Progress of Medical Science.

MEDICINE AND NEUROLOGY.

IN CHARGE OF

J. BRADFORD McCONNELL, M.D.

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ESTIMATING THE PERCENTAGE OF HEMOGLOBIN.

C. E. Ide, M.D., of Buffalo, N.Y., gives a preliminary report of a simple and accurate method of doing so in *Medicine*, June, 1897.

He speaks of the liability to error in the case of Fleischl and Gowers' hemometer amounting to from 2 to 20 per cent. The specific gravity method he thinks has not received the attention it deserves. One of the most prominent characteristics of the blood is the preserving of the consistency of its specific gravity. It will return to normal shortly after injecting larger quantities of fluid. The specific gravity of venous and arterial blood is about the same, so that the percentage of solid constituents and hemoglobin can be determined from the specific gravity. According to Hammerschlag the percentage varies from 1.057 to 1.062 in the male and from 1.058 to 1.061 in the female.

According to Jones the specific gravity of the blood varies with age and sex; is diminished after eating, increased by exercise, falls slowly during the day, rises during the night, and varies greatly in individuals; "so much so that a specific gravity which is normal for one may be a sign of disease in another."

The relation of hemoglobin to the whole amount of blood is as fourteen to one hundred.

The specific gravity of the blood corresponds more closely with the hemoglobin than with the number of red blood-corpuscles, according to Jones, Hammerschlag, Schmaltz and others. The study of the specific gravity of the blood and its relation to the percentage of hemoglobin was begun about 1839. Since then various observers have given attention to the subject. Those whose results interest us most in the consideration of the subject of this paper are Roy among the earlier observers, and Siegel, Jones, Schmaltz, Sherrington, Hammerschlag, Copeman, Hoch, Schlesinger, Hoppe-Seyler, Busch and Kerr among those who have recently furnished valuable contributions to the subject.

To two medical students, F. C. Busch, B.S., and A. T. Kerr, Jr., B.S., belong the honor of being the first to take up the study of this important subject in this country. This they did in 1894-1895 along with their medical studies.

Several methods have been employed in estimating the specific gravity of the blood. In 1873 Haro estimated the density of unknown specimens of the blood by observing the time which they occupied in passing through a tube of narrow caliber, denser blood passing through more rapidly.

Schmaltz weighed blood in a pycnometer of 0.1 cubic centimeter capacity and definite weight, and calculated the specific gravity of the same by comparing its weight with that of the same amount of water.

Fano in 1882 weighed blood immersed in a solution of gum in water, on the principle that a body when immersed in a fluid will float indifferently in that fluid (neither rising nor sinking) when the specific gravities of the two are equal. The solution of gum was made heavier by adding a denser solution of gum, and lighter by adding water. When the blood-drop floated indifferently in the solution the specific gravity of the solution was taken, and that corresponded to that of the blood. All later methods depended upon the same principle.

Roy, in 1884, on the same principle employed solutions of salts, ranging in specific gravity from 1.035 to 1.075, with a modified hypodermic syringe. The needle of the latter was prolonged upward into the interior of the syringe barrel, so as to be seen through its glass sides. The syringe having been nearly filled with salt solution, a drop of blood was drawn into it. He noted whether it sank or rose in the solution. If it sank a new solution of greater density was used; if it rose one of less density. When a solution was found in which the blood neither rose nor sank this indicated the specific gravity of the blood.

Jones used solutions of glycerol in water ranging in specific gravity from 1.027 to 1.075, differing from each other by .001 specific gravity. Into a glass jar of one drachm capacity he poured one of the solutions, chosen by guess from the appearance of the patient. Into this by means of a glass pipette, drawn out to a point and bent at right angles near the tip, he introduced a drop of blood, impetus being given to it in a horizontal direction. If it sank or rose other solutions were chosen until one was found with the specific gravity of which that of blood agreed. This gave the result.

Landois employed solutions of sodium sulphate ranging in specific gravity from 1.050 to 1.070. This method was modified by Siegel, who covered his solutions by a layer of olive oil to prevent evaporation, and introduced the blood

through this by means of a tube with a rubber cap ; and by Dastre, who employed a mixture of chloride of carbon and olive oil, which neither mixes with the blood nor coagulates it.

The last method which I shall record, and which I wish to recommend, is that of Hammerschlag. No series of solutions which must be continually standardized is necessary, and the apparatus required is simple and cheap and can be carried about by every physician. It is as follows: (1) a hydrometer jar ; (2) a hydrometer (or urinometer) ; (3) a pipette of small caliber ; (4) a glass rod ; (5) some steel pens ; (6) a bottle of chloroform ; (7) a bottle of benzol ; (8) a bottle containing a mixture of the latter two ; and (9) some filter paper. The procedure is as follows: The mixture of chloroform and benzol (beginning at the first test with equal parts, for instance) is poured into the hydrometer jar, the finger-tip of the patient is sterilized with a solution of carbolic acid and pricked with one of the pens (from which one of the nibs has been broken), which has been sterilized in a flame. A drop of blood which has been allowed to ooze from the puncture (not squeezed out) is sucked into the pipette and then gently forced into the centre of the mixture and shaken off. To avoid mixing air with the blood-drop all the blood is not to be forced out from the pipette, but a little left in its tip. If the blood-drop sinks the mixture must be made heavier with a little chloroform ; if it rises benzol must be added. The mixture must be agitated after each addition of either fluid with the glass rod, to keep the chloroform and benzol well mixed, avoiding the breaking up of the blood-drop. When the drop remains stationary, twirling around but neither rising nor sinking, the specific gravity of the mixture corresponds with that of the blood and is taken with the hydrometer. The same mixture is used indefinitely, the blood being filtered out after each test. The hydrometer jar must be kept absolutely clean, that no fine particles of foreign matter may float in the mixture and adhere to the blood-drop.

The glycerol-water and chloroform-benzol methods give practically the same results, according to Siegel, and Hammerschlag states that there is little difference between the results obtained by using the chloroform-benzol mixture and the pycnometer ; but it is readily seen that the former method is much the simplest, and dexterity is soon acquired.

The following table by Hammerschlag is given showing the percentage of hemoglobin which corresponds with the determined specific gravity. Fleischl's instrument was used by him in getting up this table, and hence is not quite correct ; the author states that he is endeavoring to construct one that will be more accurate.

Specific gravity.	Hemoglobin.
1.033-1.035.....	25-30 per cent.
1.035-1.038.....	30-35 per cent.
1.038-1.040.....	35-40 per cent.
1.040-1.045.....	40-45 per cent.
1.045-1.048.....	45-55 per cent.
1.048-1.050.....	55-65 per cent.
1.050-1.053.....	65-70 per cent.
1.053-1.055.....	70-75 per cent.
1.055-1.057.....	75-85 per cent.
1.057-1.060.....	85-95 per cent.

According to Hammerschlag this table holds good for anemia, chlorosis, malignant tumors, and tuberculosis. In interstitial nephritis the specific gravity is relatively lower than the percentage of hemoglobin. In fever, again, it is relatively lower, rising after defervescence. In disturbances of the circulation, even when there is edema, the specific gravity is generally normal.

Jones states that the specific gravity is frequently above the normal in the post-epileptic state; also that the specific gravity in syphilis is low. I have found it up to the normal in some cases of this disease.

In Busch and Kerr's series there was a case of splenic leukemia in which the specific gravity was 1.052. The hemoglobin by Fleischl's hemometer was 40 per cent., by Gowers' 68 per cent., and by specific-gravity method about 68 per cent.

Busch and Kerr studied systematically one hundred and fifty cases, at the same time determining the amount of hemoglobin with Fleischl's and Gowers' instruments. Their cases embraced a wide range of diseases, and hemoglobin percentages varying between 12 and 110. In their researches the results obtained by the Fleischl method differed from those by the specific-gravity method by from 5 to 20 per cent. The readings were higher by the specific-gravity method than by the Fleischl.

The readings by Gowers' apparatus differed from those by Fleischl's by from 5 to 20 per cent. As a general rule they were higher with Gowers' than with Fleischl's, but not as high as with the specific-gravity method. The Gowers' readings differed from the specific-gravity by from 5 to 20 per cent., the average difference being higher than with Fleischl's.

In one-half of the cases the hemoglobin as determined from the specific gravity corresponds quite well with that by the Fleischl instrument. This correspondence is *fair* between the specific-gravity method and Gowers' in more than one-half of the cases. There is a closer correspondence between the determinations by the specific-gravity and the Gowers' instrument than between those by the Gowers and

the Fleischl. The Fleischl instrument gave relatively lower readings.

In any given series of cases the specific gravity and the hemoglobin percentage as determined by it will vary to an insignificant degree.

From the foregoing we may conclude:

That there is a crying need of a method of determining the percentage of hemoglobin in blood which is within the reach of every physician.

That the methods of Fleischl and Gowers are liable to considerable error.

That Fleischl's hemometer is liable to an error as high as ten per cent.

That Gowers' instrument is liable to an error even greater than that of Fleischl's.

That the percentage of hemoglobin in blood may generally be accurately estimated from the specific gravity as found with Hammerschlag's chloroform-benzol method, for clinical purposes.

That different observers obtain the same results with this method.

That in using this method the necessity of fine discrimination between different tints is obviated.

That the error in technique in employing the specific-gravity method is slight or none at all.

That even if, since Hammerschlag's table is not entirely accurate, we have at present no definite guide for determining the exact amount of hemoglobin as compared with the ascertained specific gravity, we know the average normal specific gravity for males and females, and can determine whether any one specimen of blood contains the normal amount of hemoglobin, and can by further tests determine from day to day whether our treatment is producing an increase of the same.

A VISIT TO BAD NAUHEIM, WITH THE PURPOSE OF INVESTIGATING THE "SCHOTT TREATMENT" FOR CHRONIC HEART DISEASE.

In the May Johns Hopkins Hospital Bulletin, C. N. B. Camac, M.D., first assistant resident physician, contributes a paper giving the results of his investigations at Nauheim, in regard to this treatment, from personal observation. On undertaking to introduce this treatment into the hospital certain questions which they were unable to answer presented themselves, such as:

(1) Is any massage to be employed during or after the bath?

(2) What drugs are to be employed during the treatment, and what drugs are contraindicated ?

(3) Should the baths and exercises be given together ; or if separately, which should precede ?

(4) Are stimulants to be administered before or after the bath ?

(5) What should be the diet of the patient ?

(6) Are cases of hydrothorax or ascites to be tapped ? etc., through quite a list with which it is hardly necessary to weary you.

At Dr. Osler's suggestion, therefore, he visited Nauheim. Nauheim is in the Grand Duchy of Hesse, three-quarters of an hour from Frankfort on the Main. The Bad Nauheim is at the eastern slope of the Johannesburg, the last spur of the Taunus mountains.

It was not until 1834 that we begin to hear of Nauheim as a resort for invalids. It was not until 1860, however, that Dr. Beneke of Marburg considered scientifically the value of the medicated bath treatment. From 1859-1870 several articles by Beneke of Marburg, upon the waters of Nauheim, appear in the Berlin. Klin. Woch. From 1870 to 1890 August and Theodore Schott and J. Groedel were frequent contributors on this subject to the Berlin. Klin. Woch., also to the Deutsch. Med. Zeitung. August Schott died, but his brother Theodore continued the work, and published in 1892 an article in the Lancet which caused little comment.

In 1894 W. Bezley Thorn became an ardent advocate of the bath treatment, and published an article in the Lancet and also a small book in which he described quite fully the baths and exercises. With the appearance of this systematic little book up to the present the treatment has been very popular in England. Nauheim, its waters, and the resistance exercises, have been frequent topics in English and German medical journals. In France and America the treatment has as yet received no very thorough trial. It is interesting to note here the increase in the number of visitors from 1871 to 1895. In 1871 the visitors numbered 5,249 ; in 1891, 9,244 ; 1892, 10,272 ; 1893, 10,384 ; 1894, 11,681 ; 1895, 14,136.

Although the season was over when I visited Bad Nauheim, I had the opportunity of seeing the baths through the courtesy of Dr. Hirsch, Dr. Schott's assistant, who showed me over the grounds and described very fully the details of the treatment. It can best be described in Dr. Schott's own words : " The springs of Nauheim may be divided into two classes, those suitable for bathing and those suitable for drinking. Together with other ingredients the bath waters contain from two to three per cent. of sodium chloride, from

two to three per 1000 of calcium chloride, various salts of iron, above all, very large amounts of carbonic acid.

“Coming from the depths of the earth, they have a temperature of 82-95° F. Springing from a depth of 180 metres, supercharged with carbonic acid gas by the pressure to which they are subjected, the waters gush far above the surface; for example, spring No. 12 rises to a height of 56 feet and falls again in white seething masses.” This is a most striking condition; so richly charged with carbonic acid are these waters that the reservoir into which they fall has the appearance of a great mass of clouds. “Conveyed directly from the main by means of subterranean pipes, these waters charged with their natural gas are allowed to completely cover the body of the bather. Little bubbles of gas are seen to immediately cover the whole surface of the body; the waters of springs Nos. 7 and 12 escape from a pressure of from 1½ to 2½ atmospheres, and afford a surf bath which compares accurately with the strongest surf bath of sea water.”

The first question which arose when this matter came to be scientifically investigated was, how do these baths and exercises act? That they were very efficacious in the relief of chronic cardiac disease had been demonstrated for some years back, but their action had never been investigated. There are several explanations given:

(1) That given by Dr. Schott in the following words: “Physiological research of recent years seems to show that the salts held in solution in water externally applied have no direct action on the system; the light and mobile molecules of the gas, on the other hand, pass rapidly through the skin to the corium with its rich supply of blood. We must look upon the salts held in solution as passing by imbibition through the outermost layer of the epidermis, and so acting on the terminal nerves of the skin as to exert a reflex action on the internal organs. The warm baths act in their own peculiar manner on the organism as a whole; increased tissue change seems to be induced by an increase of the oxygen absorbing power of the cells, and hence follows the sense of the need of rest and sleep as an immediate consequence of the bath, as well as influences speedily brought to bear on the nervous system as a whole. Excessive bathing induces an excitable state of the nervous system, sleeplessness, loss of appetite and consequent loss of strength. The principal changes which ensue in the system and in the function of the special organs are that the heart beats more slowly and strongly, the pulse becomes full and increases in force, and the blood pressure may rise to the extent of 20, 30 mm. of mercury; the breathing becomes regular and quiet, and the capacity of the lungs increased.

“ While the patient is in the bath he becomes flushed and a feeling of comfort and warmth ensues which may even rise to one of an agreeable intoxicating character. Almost invariably the excretion of urine is increased; exudates in the body cavities, especially from the peritoneum, pericardium and pleura, are absorbed. This latter action and that on the valves of the heart can only be explained on the theory of reflex action produced by influences acting upon the terminal nerves.”

Another explanation is that given by Dr. Bezley Thorn, that there is a dilatation of the muscular arteries and afterwards those of the skin, and thus there is a relief of the heart from backward pressure.

In Lauder-Brunton's massage experiments he demonstrates that more blood flows through the massaged part and that blood pressure at first rises and then falls, and that on the conclusion of massage more blood collects in the massaged part. These experiments were confirmed by Dr. Oliver.* T. Grainger Stewart † concludes that the passive exercises (1) improve the circulation of lymph within the tissues, and (2) bring a larger volume of blood into the muscles. He quotes the conclusion of Ludwig to the effect that the capacity of muscles for blood is equal to the combined capacities of the internal organs and the skin. If therefore this be so and Dr. Lauder-Brunton's experiments be correct, the increased amount of blood in the muscles must indicate a relief of the congestion in the internal organs.

In Dr. Schott's explanation there are two actions :

- (1) A cutaneous excitation induced by the mineral and gaseous constituents, and
- (2) A more prolonged stimulation of the sensory nerves excited by imbibition into the superficial layer of the corium. The salt producing this excitation is the calcium chloride.

Whatever the explanation of their action may be, two points seem established :

- (1) That the apex beat alters its position ;
- (2) The area of cardiac dulness is diminished. These two facts, especially the first one, were most strikingly obvious in our first cases, and both facts were most forcibly demonstrated to me in the cases which I saw abroad. One can scarcely credit the results published until he has seen for himself these marked changes.

The case reported by Dr. Bowles in the Practitioner for July, 1896, shows a change of 3 cm. in the apex beat before and after a bath of ten minutes' duration, and he says after

* Brit. Med. Jour., June 13, 1896.

† Ibid., Sept. 19, 1896.

his visit to Nauheim, which was made for the purpose of seeing for himself, "that which I thought impossible is shown to be quite possible." This case reported by Dr. Bowles was one of chronic myocarditis, moderate pleural effusion, general anasarca and general enlargement of the heart. The age of the patient was not given. I shall not at this time attempt to report cases, but merely mention this one of Bowles in order to confirm what has been our experience of the effect of the bath upon *the position of the apex beat*, and many other reports confirmatory of this remarkable change are to be found in the literature on this subject.

The diagrams of the cardiac outline made by Dr. Bowles are not quite accurate, but there can be little difference in opinion as to the position of the maximum cardiac impulse.

To quote Dr. Schott again: "The methods of administering the baths are of the greatest importance. It is advisable to begin with a 1 per cent. salt bath containing $\frac{1}{1000}$ of chloride of calcium, freed from gas and at temperatures varying from 92° to 95° F., the bath lasting from six to eight minutes. The course of treatment should be interrupted by frequent intervals of one day. The temperature of the bath should, if possible, be gradually lowered, while the proportion of solids in solution and the duration of the bath are gradually increased. At a later stage it is permissible to proceed to the baths containing carbonic acid. The temperature may then be rapidly lowered, especially if chloride of calcium be added in order to increase the mineral strength of the bath."

The course consists of six baths: the first and the second being simply with salts, calcium chloride and the sodium chloride; the third, fourth, fifth and sixth contain carbonic acid as well as these salts.

The preparation of the baths artificially was taken up especially by W. Bezley Thorn, in London, in 1895, since which time Ewart, Bowles and Broadbent have employed them in London, Moeller in Brussels, and Heinemann in New York. Following the analysis of the Nauheim waters made by the chemist Fresenius of Wiesbaden, the artificial baths may be readily prepared. We have now packages made up at our pharmacy, each containing the proportion of salts for the different strengths of the baths, each package corresponding to 40 gallons of water, which is just about enough to entirely immerse the body. The baths of different strengths are given to appropriate cases.

I have not attempted in this note in any way to speak for or against the treatment nor to report cases. I have thought it best for the present simply to give an outline of the trip to Bad Nauheim, the purpose of which was to see the effects of the treatment and to learn something about it with

the object of trying it in the Hospital here. We have now five cases under treatment, and I trust by keeping careful records of the effects of these baths and exercises that we shall be able to pass judgment upon the weak points as well as the strong points of the method. Only by a careful trial can one place himself in a position either to recommend or to condemn the treatment. I take this opportunity of expressing my appreciation of the patience with which Dr. Schott heard and answered my many questions. I also wish to thank Dr. Heinemann for the instruction in the movements which he so carefully gave me.

In regard to the exercises, which are worthy of a lengthy description, something must be said. They consist of nineteen movements, each movement restrained by the very lightest resistance. This part of the treatment, under the supervision of a physician, is entrusted to the nurses, to whom we have given careful instructions as to the method of carrying it out.

The following are the instructions which are laid down for the nurses in the administration of the bath, also the chart showing the observation which should be made.*

RULES FOR SCHOTT BATH.

(1) Always understand clearly from the doctor the following points: (1) Strength of the bath to be given; (2) temperature of the bath; (3) length of time patient is to remain in the bath. *Note.*—Give the bath in the morning unless otherwise ordered.

(2) Observe carefully the chart and note the points therein called for. (1) Give bath on an empty stomach. (2) Note the time from the moment patient is immersed to that when he is taken out. (3) Allow the patient to make as little exertion as possible; assist him in every way. (4) A sheet may be drawn over the tub, but not around the patient. (5) Be sure the entire body is immersed. (6) Keep the finger on the pulse during the entire time the patient is in the bath.

Danger Signals.—Cyanosis (bluing of the face), dyspnoea (difficult breathing), apnoea (gasping), inappreciable pulse. On the appearance of any of these, take the patient out of the bath immediately, put him to bed and keep him as quiet as possible. Friction while in the bath is not necessary, but if the fingers and toes become bluish the extremities may be rubbed slightly towards the trunk. Friction should be cautiously employed; when the patient is out of the tub rub him to a glow; give him a glass of milk or cup of bouillon and allow him to rest for an hour.

*These rules are made after perusal of the literature, also from instruction obtained from Dr. Schott personally.

Diet.—Small quantity. q. 4 h. Meat—boiled chicken, mutton chops; eggs, two a day; oysters, raw or panned; vegetables—peas, beans, lettuce; liquids—beef tea, bouillon, cocoa, lemonade, milk. *Note.*—Never give more than 4 ounces of fluid at a time. Should be sipped. Wine—Port, Rhine, sherry, brandy, dram to half ounce.

Note.—Something light (cocoa and toast) should be taken one-half hour before the bath; something light and hot (bouillon, milk punch and toasted crackers) should be taken directly after the bath. If the heart's action is poor, sherry, brandy or port wine may be given after the bath. Last meal to be taken three hours before retiring.

Bath No. I. Sodium chloride, 4 pounds; cal. chlor., 6 ozs.

Bath No. II. Sodium chloride, 5 pounds; cal. chlor., 8 ozs.

Bath No. III. Sodium chloride, 6 pounds; cal. chlor., 10 ounces; sodium bicarb., 6 ounces; HCl, 7 ounces.

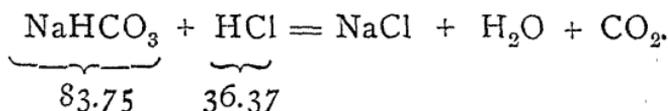
Bath No. IV. Sodium chloride, 7 pounds; cal. chlor. 10 ounces; sodium bicarb., 8 ounces; HCl, 12 ounces.

Bath No. V. Sodium chloride, 9 pounds; cal. chlor., 11 ounces; sodium bicarb., 1 pound; HCl, 1 pound.

Bath No. VI. Sodium chloride, 11 pounds; cal. chlor., 12 ounces; sodium bicarb., 1 pound; HCl, 2 pounds

Each bath consists of 40 gallons of water.

NOTE.—By using a little more NaHCO_3 than is required to take up the HCl, the metal tubs may be employed without doing them any harm.



THE EXERCISES.

The exercises are called by Dr. Schott "Widerstand-gymnastik," or resistance gymnastics, and consist in slow movements executed by the patient and resisted by the physician or operator. A short interval is allowed after each movement, during which the patient sits down. The exertion employed must be very small, and should cause no increase in respiratory movements, flushing or pallor. The patient should be loosely and lightly clothed, and instructed to breathe quietly. The resistance made should be of such a kind that the patient may always feel himself easily the master. The operator must not grasp or in any way constrict the limb, but should oppose by the hand held flatly. The movements are nineteen in number:

Arm. (1) Arms extended in front of body on a level with shoulder, hands meeting; arms carried out until in line, and brought back to original position. (2) Arms hanging at

sides, palms forward ; arms flexed at elbow until tips of fingers touch shoulder, back to original position ; *one arm only moved at a time.* (3) Arms down, palms forward, arms carried outwards and upwards until thumbs meet over head ; back to original position ; one arm only moved at a time. *Not always advisable.* (4) Hands in front of abdomen, fingers flexed so that the second phalanges touch those of opposite hand ; arms raised until hands rest on top of head ; back to original position. (5) Arms down, palms against thighs, arms raised in parallel planes as high as possible ; back to original position.

Trunk. (6) Trunk flexed on hips ; return to original position. *Resist with both hands.* (7) Trunk rotated to left, to right ; return to original position. *Resist with both hands.* (8) Trunk flexed laterally. *Resist with both hands.* (9) As No. 1, but fists clenched. *Resist with both hands.* (10) As No. 2, but fists clenched. *Resist with both hands.*

Large Arm Movements. (11) Arms down, palms against thighs, *each in turn* raised forwards and upwards until arm is along side of ear, then turned outward, and arm descends backwards. Not always safe. (12) Arms down, palms to thighs, *both together* moved backwards in parallel planes as far as possible without bending the trunk forwards. Not always safe.

Legs. (13) Thighs in turn flexed on trunk, opposite hand resting on chair. (14) Lower extremities in turn extended fully, and bent on trunk forwards and backwards to extreme limits of movement, opposite hand resting on chair. (15) Legs in turn flexed on thigh, both hands on chair. (16) Feet together, lower extremities in turn abducted as far as possible and brought back to original position, opposite hand on chair.

Hands and Feet. (17) The arms, extended horizontally outwards, are rotated from the shoulder-joint to the extreme limits forwards and backwards. (18) The hands in turn are extended and flexed on the forearm to extreme limits, and brought back in line with arm. *Resist with both hands.* (19) The feet in turn are flexed and extended to extreme limits and then brought back to their natural position. *Resist with both hands.*

We have arranged these in 5 groups, as in this way they may be more readily committed to memory.

RULES FOR OPERATORS.

1. Each movement to be performed slowly and evenly at an uniform rate.
2. No movement to be repeated twice in succession in the same limb or group of muscles.
3. Each single or combined movement to be followed by interval of rest. Count five.

4. Patient's breathing should not be accelerated.

I. *Avoid.* 1. Dilatation of the alæ nasi (dilating of nostrils).

2. Drawing of corners of mouth.

3. Huskiness and pallor of cheeks and lips.

4. Yawning.

5. Sweating.

6. Palpitation.

If any of the above make a complete interval; or if excessive, stop the exercises for the day.

5. Direct patient to breathe regularly. If he holds his breath, make him count in a whisper.

6. Do not constrict the part which is being moved.

JOHNS HOPKINS HOSPITAL.

THE AMERICAN PÆDIATRIC SOCIETY'S REPORT ON THE COLLECTIVE INVESTIGATION OF THE ANTITOXIN TREATMENT OF LARYNGEAL DIPHTHERIA IN PRIVATE PRACTICE, 1896-1897.

In this second and supplementary investigation, the aim has been to ascertain: (1) What percentage of cases of laryngeal diphtheria recovers without operation under antitoxin treatment. (2) What percentage of operated cases recovers. The report now submitted may properly be limited to answering these two inquiries.

Since the beginning of the general use of intubation, no disease has been more thoroughly observed and more fully reported than laryngeal diphtheria. Operative cases especially, whether ending fatally or favorably, have been fully and promptly put on record. The result has been a collection and tabulation of cases available for control, such as few diseases offer. There are thousands of intubation cases before the days of antitoxin, and thousands since, available for comparison. It is, then, to cases of laryngeal diphtheria, especially those requiring operative interference, that we may apply the crucial test of the value of the antitoxin treatment.

Sixty thousand circulars containing the following questions have been distributed:

Age of patient?

Diagnosis confirmed by:

(1) Presence of other cases in the family?

(2) Appearance of membrane elsewhere?

(3) Bacteriological cultures?

How many days and parts of a day after the first appearance of the disease was antitoxin first administered?

How many doses of antitoxin were administered?

Dose of each injection in antitoxin units?

Whose antitoxin used?

Non-operative cases—evidence of disease:

Hoarseness?

Aphonia?

Stenosis?

Operative cases:

(1) Intubation? On what day?

(2) Tracheotomy? On what day?

How long, in days and fraction of a day, was tube in the larynx or trachea?

Sequelæ (in recoveries):

(1) Broncho-pneumonia?

(2) Paralysis?

(3) Nephritis?

Death, cause of, and on what day?

(1) Broncho-pneumonia?

(2) Extension of membrane to the bronchi?

(3) Sudden heart paralysis?

(4) Nephritis?

(5) Sepsis?

(6) Accidents of operation?

Recovery?

Remarks, especially on fatal cases?

These circulars were distributed throughout the United States and Canada, the following means being employed: contributors to first report, members of the society acting as agents for their respective localities, boards of health, local medical societies, and antitoxin manufacturers. At the outset, in this connection, it is a pleasure to acknowledge that the labors of the committee have been much lightened by the uniform good will of all addressed, more aid coming spontaneously than in the previous investigation. It is also a pleasure especially to acknowledge the society's indebtedness for efficient aid in distributing circulars and securing returns to H. K. Mulford Company, Parke, Davis & Co., Lehn & Fink (Gibier's), the health departments of Chicago, St. Louis, New Orleans, Denver, San Francisco, Boston, Washington, Buffalo, Providence, Ann Arbor, Newark, Montreal, Toronto, and others.

To the New York health department are due the thanks of the society for every possible courtesy in distributing blanks and, through their inspectors, of securing returns of operative cases.

In order to reduce sources of error it was desirable to bring together a large number of cases, from widely distributed localities, from many different observers and operators, and from a period of time including all seasons of the year. All

returns have been examined by the committee and only such cases accepted as bore satisfactory evidence that they were, first of all, diphtheria, and secondly, that the lesion had invaded the larynx.

A total of 1,704 cases of laryngeal diphtheria are ours for present study. A few cases (228) had not satisfactory evidence that there was laryngeal involvement; indeed some were reported through a misunderstanding of the fact that only laryngeal cases were wanted, and a few were reported in which there was no mention that antitoxin was used. These cases are of course not included in the number referred to above. Of the 228 cases, 218 recovered and 10 died.

In a total of 1,704 antitoxin-treated cases of laryngeal diphtheria, there was a mortality of 21.12 per cent. (360 deaths).

TABLE OF ALL CASES SHOWING AGE AND RESULT OF TREATMENT.

Age.	Fatal Cases.	Recoveries.	Totals.	Mortality, Per Cent.
1 year and under.....	25	35	60	41.66
1 to 2 years.....	77	219	296	26.01
2 to 3 years.....	81	260	341	23.75
3 to 4 years.....	42	216	258	16.27
4 to 5 years.....	47	160	207	22.70
5 to 10 years.....	72	345	417	17.26
10 to 15 years.....	9	64	73	12.32
15 to 20 years.....	2	24	26	7.65
Over 20 years.....	5	17	22	22.72
Unknown.....	0	4	4	
	360	1,344	1,704	21.12

CASES NOT OPERATED ON.—The first inquiry of the circular was what percentage of cases of laryngeal diphtheria recovers without operation under antitoxin treatment.

Of 1,704 total cases, 1,036 were not operated upon (60.79 per cent.). Of these most did not require operative interference; a few cases were thought to require it, but operation was refused. All cases are included, and it will be noted there are no eliminations.

Among the 1,036 cases not operated on, there was a mortality of 17.18 per cent. (deaths 178), or, to answer the inquiry of the circular exactly, of 1,036 cases not operated on 82.82 per cent. recovered (or 858 cases).

As good as is this percentage of recovery in so large a number of cases of diphtheria of the severest type, it is believed it is not so good as it ought to be. Cases of laryngeal diphtheria not requiring operation, according to the testimony of consulting intubationists, are seldom heard from a second time, and less often find their way into reports. It was

formerly estimated that about 10 per cent. of cases of laryngeal diphtheria recovered without operation. The present report shows that in 1,036 cases 82.82 per cent. recovered.

CASES OPERATED UPON.—In analyzing this class of cases, it is believed a more exact conclusion as to the value of the antitoxin treatment can be arrived at than in the non-operative.

There will be entire harmony of opinion as to the severity of laryngeal diphtheria which requires operative interference. In the early days of intubation it was customary to speak of the percentage of recoveries, and 25 per cent. and 27 per cent. were considered good results. In the last report the recoveries had crept up so high in the one-hundred cases, that it seemed more natural to speak of the percentage of mortality.

In this connection it is interesting to inquire what were the best reliable statistics of intubation, taking cases as they occurred, without selection, in pre-antitoxin days. In 5,546 intubation cases collected by McNaughton and Maddren in 1892, the mortality was 69.5 per cent., or, to bring the facts into line, 30.5 per cent. recovered.

O'Dwyer's personal experience, in private consultation, brings us more nearly face to face with the old-time experience with diphtheria. Note that the following 500 cases came under the observation and care of one practitioner, a skilled operator, extended over a dozen years of time, and therefore included all types of the disease.

Exclusive of the first 100 cases of intubation, which he (O'Dwyer) regards as experimental, the results stand as follows:

2d.....	100 intubations—	recoveries,	27 per cent.
3d.....	100	“	“ 30 “
4th.....	100	“	“ 26 “
5th....70 on the.....	100	“	“ 27 “

Total percentage of recoveries, 27.56 per cent. When he had reached 70 on the fifth hundred something occurred which carried the phraseology up over the divide, so that it was appropriate to speak of percentage of mortality. At this point in history, anti-toxin arrived and interrupted forever the old series. In O'Dwyer's next 59 cases the mortality was 14 deaths, or 23.7 per cent.

In a total of 1,704 laryngeal cases there were 668 cases operated upon. In the 668 there were 182 deaths, or a mortality of 27.24 per cent. In the former report, in 553 intubated cases the mortality was 25.9 per cent. In approximate figures there is a difference between 27.25 per cent. and 26 per cent.

SUMMARY.—Sixty thousand (60,000 circulars were distributed throughout the United States and Canada.

Time allowance, the eleven months ending April 1, 1897.

Whole number of cases in this report, 1,704; mortality, 21.12 per cent. (360 deaths).

The cases occurred in the practice of 422 physicians in the United States and Canada.

Operations employed:

(a) Intubation in 637 cases; mortality, 26.05 per cent. (166 deaths).

(b) Tracheotomy in 20 cases; mortality, 45 per cent. (9 deaths).

(c) Intubation and tracheotomy in 11 cases; mortality, 63.63 per cent. (7 deaths).

Number of States represented, twenty-two, the District of Columbia, and Canada.

Non-operated cases, 1,036, 60.79 per cent. of all cases; mortality, 17.18 per cent. (178 deaths).

Operated cases, 668, or 39.21 per cent. of all cases; mortality, 27.24 per cent. (182 deaths). Two facts may be recalled in connection with this paragraph. First, that before the use of antitoxin it was estimated that 90 per cent. of laryngeal diphtheria cases required operation, whereas now, with the use of antitoxin, 39.21 per cent. require it. Second, that the percentage figures have been reversed, formerly 27 per cent. approximately representing the recoveries, while now, under antitoxin treatment, 27 represents the mortality. To put it in other words, before the use of antitoxin 27 per cent. recovered; now 73 per cent. recover, and this in the severest type of diphtheria.

The present report will strike many members of the society as revealing a mortality a little too large in each of the two classes. The mortality is large, larger than the personal experience in private practice of many would expect.

The reasons for this are (1) that antitoxin is still used too late, either from procrastination on the part of the physician, or objection on the part of the friends; or (2) in a half-hearted way, which shows itself in doses from one-tenth to one-fourth as large as they should be. In truth, both the physicians and the friends of the patient are timid.

This report, it must be admitted, shows too large a mortality. In the opinion of the committee it is a larger mortality than will ever be shown again. Antitoxin is gradually being used earlier in the disease, and it will soon be used in sufficient doses.

To the society, the committee desires to say that it has sought to carry out its wishes in putting antitoxin on trial, to accept no testimony that did not bear the stamp of reliability,

that it has employed the methods approved in the case of the first investigation and report, and that it has confined its work to definitely answering the main questions which the society and profession now have in mind. Points that were settled in the first report, and have since been corroborated by general medical literature, are not again taken up.

If the committee is asked to put forth the three most valuable points established in this eleven months' work, they are:

First. The mortality of laryngeal diphtheria at present rests at 21.12 per cent.

Second. That 60 per cent. approximately have not required intubation.

Third. That the mortality of operated cases is at present 27.24 per cent.

(Signed)

W. P. NORTHRUP, M.D.,
 JOSEPH O'DWYER, M.D.,
 L. EMMETT HOLT, M.D.,
 SAMUEL S. ADAMS, M.D.,

Committee.

THE COMMITTEE RECOMMENDS: Antitoxin should be given at the earliest possible moment in all cases of suspected diphtheria.

Quality: Of the products on the market some have, by test, been found to contain one-half to one-third the antitoxin units stated on the label. Select the most concentrated strength of an absolutely reliable preparation.

Dosage: All cases of laryngeal diphtheria, the patient being two years of age or over, should receive as follows:

First dose—2,000 units at the earliest possible moment.

Second dose—2,000 units, twelve to eighteen hours after the first dose, if there is no improvement in symptoms.

Third dose—2,000 units, twenty-four hours after the second dose, if there is still no improvement in symptoms.

Patients under two years of age should receive 1,000 to 1,500 units, the doses to be repeated as above.

SURGERY.

IN CHARGE OF

FRANK R. ENGLAND, M.D.,

Prof. of Clinical Surgery University of Bishop's College ; Surgeon Western Hospital,

AND

GEORGE FISK, M.D.,

Instructor in Surgery University of Bishop's College ; Assistant Surgeon Western Hospital.

THE RADICAL CURE OF HERNIA, WITH A REPORT OF THREE HUNDRED AND SIXTY CASES.

By W. B. COLEY, M.D., of New York. (*Annals of Surgery*, Mar. 97.)

Dr. Coley is a staunch upholder of Bassini's method of operation and gives a very full report of his 360 cases. He began this method in 1891 and has had the perseverance to trace the majority of cases, all except 20, from 6 months to five years. Recurrence has been present in four cases, two in Bassini's method with kangaroo tendon, and two in ligature of the sack and suture of the canal. One death occurred; this was in a child who died from double pneumonia, probably caused by the ether, as it had had measles six weeks previously. In speaking of when to operate he says:—"I believe it a good rule never to advise operation in children until a truss has been tried for a considerable length of time (e. g., one to two years) without benefit. There are important exceptions to this rule. In femoral hernia operation can be advised at once, for the reason that the chances of cure by means of a truss are too slight to be considered. Irreducible or adherent omentum and reducible hydrocele may furnish sufficient reason for early operative interference.

"In regard to adults, operation may be advised in most cases of inguinal and femoral hernia up to the age of fifty, unless some contraindications exist." "Technique of Bassini's operation.—The technique of the operation is now so well known that it is unnecessary for me to go over the several steps. There are a few points, however, to which I would like to call especial attention, as I believe them to be of importance: First, the substitution of kangaroo tendon for silk (used by Bassini), which I have adopted for all buried sutures, I consider a distinct advantage. A year or more ago I published sixteen cases in which I had observed very slow healing and troublesome sinuses, due to non-absorbable sutures, silk, silk-wormgut, and silver wire. Since then I have seen four others. Many of these sinuses developed upwards of a year after the operation, and in wounds that had healed by primary union. More than this, the long-continued

suppuration so weakened the canal that relapse occurred in nearly all the cases. These cases, I think, furnish sufficient reason for abandoning all non-absorbable sutures. In most cases an extra suture should be placed above the cord, the cord passing between the two upper sutures."

The report is completed after some further discussion of technique, by giving in detail the last 160 cases.

AIROL AND OTHER NEW SUBSTITUTES FOR IODOFORM.

By Dr. CARL S. HAEGLER (Basel).

An effort to discuss a new substitute for iodoform is met with scepticism, for there have been many announced which have failed in their purpose. The three chief objections to iodoform have been its toxic action, the fact that it frequently acts as an irritant to the skin and its disagreeable odor. Despite the many articles which have been written, its exact action is unknown. We do know that it is not an antiseptic, and that wounds can be infected by the use of non-sterile iodoform. It undoubtedly acts through its products of decomposition, the principal one of which is iodine. Whether it acts upon the micro-organisms, their toxins, or upon the tissues is unknown. Where putrefaction is taking place it is readily decomposed. Its antituberculous action is also clearly established, whether by acting upon the bacilli or by modifying the tuberculous tissue is unknown.

What we demand of a substitute for iodoform is: (1) it shall not be as toxic; (2) it shall not have any odor; (3) it shall not irritate the skin; (4) it shall contain a sufficient quantity of iodine or a similar effective antiseptic, which it can part with under the same conditions as iodoform. Iodol and aristol do not fulfil these.

Dermatol has a feeble antiseptic action, and has its principal use in dermatological practice on account of the Bismuth it contains.

Lüdy introduced iodine into the combination of gallic acid and bismuth, of which dermatol is composed, and produced airol. This substance rapidly gives up its iodine, when introduced into wounds, through the action of the temperature of the body.

The author fed guinea-pigs, white mice and cats toxic doses of dermatol and airol and produced ulceration in the colon and perforation of the stomach, so that they are not suitable for internal administration. He tried the action of iodoform, airol, and dermatol on various pathogenic bacteria. Iodoform checked the growth of all except the cholera bacil-

lus, which it killed. Airol acted similarly; its action in pyogenic micro-organisms, like that of iodoform, being less marked than upon others, but the conditions in the test tube are not the same as in wounds, where, as Broatz has shown, both antiseptics cause a complete cessation of growth of staphylococcus aureus. The experiments conducted by the author upon animals gave varying and unsatisfactory results.

In practice we need a powder which, by virtue of its property of liberating iodine in a nascent state, as iodoform does, will act as an antiseptic, and at the same time have desiccant properties, so as to dry up wound secretions. Airol fulfils both the requirements, and, in addition, is free from toxic and irritant properties of iodoform, and above all, its disagreeable odor. The author used airol for two years in polyclinical work and found that it had many advantages over iodoform. It contains bismuth, and thus acts as a desiccant. In the treatment of furuncles and carbuncles it is only used in the form of gauze 10 per cent. impregnated with the powder after opening the same. In erysipelas the liberation of iodine cannot keep pace with the advance of micro-organisms along the lymph vessels, and hence it is of no value. In phlegmonous inflammation caused by streptococci it is of great value. In dressing recent injuries its mild antiseptic action is of great value, for experience has taught us that aseptic dressings are not as satisfactory in these cases as antiseptic. The author believes that airol can be placed side by side with iodoform and that in some respects it excels it. It stimulates granulations and can be used in combination with sterile wet dressings in the form of a powder in the treatment of acute phlegmons. For injecting tubercular joints the author uses a 10 per cent. emulsion, and has noticed an action upon these tissues similar to that of iodoform. He has employed airol in over 2,000 cases, and believes that it can be highly recommended.—(*Annals of Surgery*, March, '97.)

LARYNGOLOGY.

IN CHARGE OF
GEO. T. ROSS, M.D.,

Laryngologist Western Hospital ; Professor of Laryngology University of Bishop's College.

Relation of Adenoids and Deaf Mutism.—Attention has been lately called to the greater frequency of adenoid vegetations in the deaf and dumb than in healthy children. Peisson reports that post nasal growths were found by him in over fifty per cent. of the deaf and dumb ; Aldrich gives a greater percentage, viz. : seventy three. Various authors give the average of the disease in otherwise healthy children as five (5) or six per cent. So that the enormous difference cannot be regarded as a simple coincident. Sendziak says that it is probable some children are born with adenoids, and the cause of deafness is mechanical obstruction of Eustachian tube or an inflammatory process in middle ear. He points out that cases are recorded, though rare, in which deaf mutes have been cured by removal of adenoid vegetations, and cites one case occurring in his own experience where good results followed the operation.

Luzzati (of Turin) records a peculiar reflex effect following the extraction of a portion of the middle turbinated bone. The patient (female), of a quiet and taciturn disposition, having refused any local anesthesia, the piece was removed by the cold snare without difficulty. After a few minutes she gave way to violent excitement and laughter, becoming most loquacious, declaring to the doctor that she was now perfectly cured, and between her speeches laughing immoderately. This state lasted for a day, after which she became rational and acquired her usual character.

Piaget (of Grenoble) publishes the results of his experiments showing how the nasal fossæ are protected against disease germs. His conclusions are :—

(a.) The nasal cavities proper are aseptic.

(b.) This aseptic state applies to the nasal fossæ of the lower animals.

(c.) This is owing to many influences, but mainly to the bactericidal action of the nasal mucous secretion.

(d.) As factors to this end he enumerates the formation of the nose and the action of the ciliated epithelium, which dislodges not only the germs and dust, but the desquamated epithelial cells impregnated with innumerable bacteria.

The author proved in his work that healthy nasal secretion can kill most of the pus cocci. Gourc (Paris) in recent experiments fails to confirm this statement.

Diphtheria in the Adult.—Gougenheim (*Annales de l'Oreille, etc.*) in his experience gives his conclusions as follows:—

1. Diphtheria in the adult is more common than is usually supposed.
2. It is disregarded; because
 - (a.) It is almost constantly free from danger.
 - (b.) A bacteriological examination is often neglected.
 - (c.) Symptoms do not differ in most cases from those of acute angina, lacunar or herpetic.
3. The larynx is rarely invaded; and the signs of that invasion are never so grave as seen in infants.
4. Paralysis from diphtheria is rare in adults and quickly cured.
5. The Loeffler bacilli may be short, medium or long.
6. Contagion from diphtheria in the adult may attack children, hence the necessity for prophylactic measures.
7. Albuminuria does not seem to affect the prognosis.
8. The cure is often spontaneous, but sometimes serotherapy is indicated. Dose 5 to 20 c. c. In hypertoxic cases the serum is useless.

Ozena Cured by Roux's Serum.—Molinie (Marseilles) reports three cases typical old ozena which had progressed to considerable atrophy of the nasal mucous membrane, spreading to the pharynx, with ear complications, treated by hypodermic injections of Roux's antitoxine exclusively. The results were disappearance of the subjective troubles, foetid odor, nasal obstruction, and nose blowing; also a healthier appearance in the mucous membrane. The difficulty of explaining these phenomena is acknowledged. The few cases experimented on also precludes any exact inferences. The fact remains that no previous remedy ever produced such results in ozena, even temporarily. On this account the treatment merits a fair trial, if carefully carried out. Time and experience are required to test and explain the specific action of serum on the pathogenic agent, at present unknown, of atrophic rhinitis. Compaired (Madrid) reports two other cases with successful results under the new treatment. He concludes his remarks by saying:

1. This treatment has so far given the best positive results.
2. After the 2nd or 3rd injection of 5 or 6 c. c. the foetid odor disappeared, decrease of crusts and dryness in the nasal fossa, and increase of fluid secretion, etc., as described by Molinie. Great care is necessary in making injections antiseptically and gradually increasing doses.

Chiari at a recent meeting of Vienna Laryngological So., discussed the treatment of closure of the Naso-Pharynx by adhesion of Velum Palate to posterior Pharyngeal wall.

After its separation by galvanic cautery, he dilated the cicatrices with the finger. The patient having now acquired nasal respiration there was inserted daily for 5 hours a tampon of iodoform gauze. This was done for 20 days, while massage was daily performed first with right hand and then with the left. In this way the angles between the lateral walls of pharynx and soft palate were enlarged, while any reforming of cicatrice was prevented and infiltrations reabsorbed. Then a hard rubber pelote or dilator was introduced behind the velum, the pelote being attached to a palatine plate with a strong golden clasp. This was inserted several hours daily and massage continued for a permanently good result.

Temporary Amblyopia from Eucaine.—Shastid records an instance of the toxic effect of eucaine. A five per cent. solution was applied for anesthesia to a turbinate. Amblyopia, rapid pulse and incoherent talk resulted and lasted several hours. Such laudatory notice has been given this drug that it is well to remember experience with it thus far has established the possibility of producing vertigo, faintness and distressful tightness across the chest by its local administration. Stimulation with brandy usually restores the functions.

Medical Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, January 29th, 1897.

GEO. WILKINS, M.D., PRESIDENT, IN THE CHAIR.

EXPERIMENTAL CEREBRAL LOCALIZATION.

Dr. WESLEY MILLS exhibited in a fresh condition the brain of the rabbit shown at his demonstration before the Canadian Medical Association in August last. The animal was exhibited the day after the operation, which consisted in the removal, not only of the cortical centres for the limbs, neck, etc., but, as the specimen showed, so much of the cerebrum that the ventricles were in part exposed. When exhibited the day after the operation the animal sat up in the usual position, walked and leaped so well that it was difficult to distinguish it from an intact rabbit.

In this instance the brain had been reached by cutting down to the dura, slitting the latter open and turning it aside without removing it. The cerebrum was sliced away, to the extent indicated before, with very little hæmorrhage. Antiseptic precautions were employed. The edges of the dura were approximately sutured, and the margin of the skin wound brought into apposition by the same means.

The wound healed rapidly, and the rabbit remained well and active till recently, when it suffered from skin disease and died a few days ago.

Examination showed a scar on the line of the incision in the skin, but nothing of the kind was apparent in the dura. A thin straw-colored fluid was found beneath the dura, but there were no adhesions either of skin and dura, or between the latter or the cerebrum. Dr. Mills said that without experience it would be difficult to believe that a rabbit should survive such an operation and have to all intents and purposes the same functional capacity as an intact animal for a period of about five months. He thought it proved clearly that so far as the cortex of the cerebrum was concerned there were great differences between different animals below the primates, and between the former and the latter.

TWO CASES OF PERFORATED GASTRIC ULCER.

Dr. JAS. Bell exhibited two patients.

Dr. GEO. E. ARMSTRONG congratulated Dr. Bell on the success of his cases, especially the one in which he had sutured the stomach. He thought that these cases when operated upon early gave good chances of recovery. Three cases of recovery after suture of a perforated stomach from gastric ulcer had now been reported in Montreal. He agreed with Dr. Bell's diagnosis of the case which he had drained.

The pain in peritonitis from perforation was generally central about the umbilicus, but the point of maximum tenderness determined the differential diagnosis. If this point was over the appendix, then the seat of perforation was there, if the stomach was perforated the point would be found over that viscus, and especially so if the case was seen early. In a recent discussion Weir reported that of 74 cases, those operated on before 12 hours had a mortality of 42 per cent; those from 12 to 24 hours, 81 per cent; and after 24 hours, 93 per cent.

Infection from the stomach was not so severe as that from the appendix and intestines lower down, and Treves' idea, that the upper zone was less susceptible, was better explained by this fact.

It was an advantage before introducing the sutures to strip off the fibrin surrounding the perforation and so have a stomach wall of normal strength and thickness to deal with.

He felt that the question of recovery without operation depended on the seat and size of perforation. If it occurred on the posterior wall or lesser curvature, where adhesions were liable to form early, recovery was much more probable than if a large perforation occurred on the anterior wall, and the stomach, falling back empty, had nothing to adhere to. Gas and stomach contents would separate it from the anterior abdominal wall in the same way as gas got in front of the liver and spleen in perforation of the stomach or bowel.

A point made by Weir, with regard to the statement sometimes made that no vomiting followed perforation of the stomach, was that a large opening permitted the stomach to empty itself into the abdominal cavity; but, if the perforation in the stomach wall was small, then the stomach contents would more readily pass upwards and vomiting would occur.

Dr. F. J. SHEPHERD thought, from the fact of there being air in the abdominal cavity and recovery having taken place, that Dr. Bell's diagnosis of perforated gastric ulcer was the only possible one. He asked what the statistics of the pathologists showed the fre-

quency of recovery without operation to be. He did not agree with Dr. Armstrong's idea of the stomach falling back.

That the upper zone of the abdomen was less liable to infection was due to the fact that the stomach contents were acid and unfavorable to the growth of bacilli, which were thus less virulent.

Dr. A. LAPHORN SMITH asked if in sewing up the perforation it was the custom to remove the raw edges. He agreed with Dr. Armstrong that if there was a large opening the contents would escape and the organ collapse.

Dr. D. F. GURD asked if the first patient had been anæmic.

Dr. J. G. ADAMI said he could not give the statistics, but it was extremely rare to find evidences of perforation having occurred, although old extensive ulcerations of the stomach were frequently met with.

Dr. BELL, in reply said, in regard to the question raised by Dr. Shepherd and Dr. Adami, that one such case was mentioned by Taylor in the *Medical Record* during 1888. Irrigation and drainage had been carried out, and at the autopsy two months later, an anterior healed perforation had been found.

In reply to Dr. Smith, he said paring the edges had been done in a few cases, but the majority of surgeons did not think it was necessary, as what was really aimed at was closing by a Lembert's suture. The first sutures were only put in to hold the parts together and prevent escape of the contents while the Lembert's sutures were being introduced.

In reply to Dr. Gurd, he stated that the girl showed no symptoms of anæmia.

HÆMORRHAGIC CYSTS OF THE THYROID.

Dr. E. W. ARCHIBALD read a paper on this subject.

Dr. F. J. SHEPHERD said that the investigations of Drs. Bradley and Archibald explained the sudden increase in large thyroids which caused dyspnoea and induced the patient to seek relief. Hæmorrhage seldom occurred in a healthy gland; the history was always that of a slow growth before the rapid increase.

It was rare to meet with a pure cyst; in many, a large mass of adenomatous material was found at the base and they differed from the colloid cysts which were easily enucleated.

He had recently operated on an enlarged thyroid in a case presenting all the symptoms of Graves' disease with the exception of exophthalmos. Two solid tumours were removed with complete relief of all the symptoms.

Dr. W. I. BRADLEY felt that Dr. Archibald's paper had elucidated some of the obscure points in his own work, so that nothing now was left in doubt.

Dr. ADAMI said that the interest of these cases lay in their being the connection between the cystic and the goitrous forms. The large proportion of Dr. Shepherd's cases were cystic, and the same thing was found in Reverdin's report of cases examined in Switzerland. It was not generally known that Osler had shown that here in the neighbourhood of Montreal we have the most goitrous region in America and the most favourable opportunity for study, and to thus advance the knowledge of this interesting part of the human frame.

In a series of goitres received from Drs. Bell and Shepherd, he

had noted a great tendency to hæmorrhage in some which were not cystic. In adenoma it was quite common to have very thin-walled vessels which ruptured easily.

AN OBSCURE CASE OF PURPURA HÆMORRHAGICA.

Dr. W. F. HAMILTON reported this case.

Dr. J. M. ELDER had seen the patient the day he entered the hospital, and had been struck by his anæmic condition. Having been acquainted with his family for a number of years, he could add to the family history as given by Dr. Hamilton. One aunt had died from profound anæmia with frequent vomiting of blood. There was also a distinct history of tuberculosis on both the father's and mother's side.

Dr. R. TAIT MCKENZIE had examined the boy in the fall of 1895 and found him sound in every particular, both under conditions of rest and exercise.

Dr. H. A. LAFLEUR thought a chemical examination of the blood in such cases might be of value. The case seemed somewhat analogous to snake-bite, in which the poison was chemical and not bacterial.

In purpura of such wide distribution fever was not uncommon, although it was often absent in mild cases. It was quite analogous to the fever found in severe cases of anæmia, leukæmia, and other conditions in which there was a profound alteration of the blood.

Stated Meeting, February 12th, 1897.

GEORGE WILKINS, M.D., PRESIDENT, IN THE CHAIR.

COMMUNUTED FRACTURE OF THE LOWER JAW.

Dr. J. ALEX. HUTCHISON exhibited the case and read the following report:

Ralph B., aged 7 years, entered ward L, Montreal General Hospital, September 26th, 1896.

A short time previously (one hour) he had fallen through an elevator shaft, a distance of about thirty feet. On examination by me on the following day (Sunday), it was decided to endeavour to bring the parts together by sutures. This I did on the 28th, the second day following the accident. After anæsthesia by chloroform, examination showed the following:

A dirty contused wound on the right side under the border of the lower maxilla leading down to the fracture and communicating with the mouth. The bone was shattered and several teeth gone. The canine of lower set was found imbedded in the cheek, passing through a rent in the mucous membrane. On left side, the mucous membrane was torn and the bone fractured opposite the canine tooth.

Owing to the two fractures and the violence of the blow the central portion of bone was very loose, and silk sutures were applied on each side, on the left bringing the bone in good position, but on the right, owing to the loss of bone, there was a considerable space which allowed the bone to fall away. After cleaning the part a leather splint was applied. Suppuration followed, and sutures gave little support.

Dr. J. S. Ibbotson, the dental surgeon to the Hospital, was asked to make an inter-dental splint of rubber, which he did, opposing this by a plaster of paris bandage round the jaw. This successfully held the parts in position till union took place. The patient now has a good jaw, the lower teeth that remain are in fair position. I bring the case before you to show the value of the inter-dental splint, and the good result in so grave an injury.

The notes are from report of my house surgeon, Dr. H. K. McDonald.

REMOVAL OF A FIBROMA OF THE MESENTERY WITH RESECTION OF NEARLY EIGHT FEET OF THE SMALL INTESTINE.

Dr. F. J. SHEPHERD stated that the man from whom the tumour and intestine had been removed was 28 years of age, and had first noticed the enlargement of the abdomen over a year ago. He had never suffered any pain. The operation was performed on January 18th, 1897, and a round smooth tumour was seen attached in front to the abdominal wall by adhesions but apparently free at the sides. On enlarging the incision and delivering the tumour it was found that about $2\frac{1}{2}$ feet of gut was intimately associated with its under surface and that the tumour grew from between the layers of the mesentery. To remove the tumour it was necessary to tie a number of mesenteric vessels and this deprived a large amount of gut of its nutrition. Within an inch or two of eight feet of small bowel had to be removed before living bowel could be reached. The two ends were united by immediate suture. The bowel removed was chiefly ileum, only about six inches of the lower end of the ileum being left. There was an attachment of the tumour also to the transverse colon, but it seemed to grow from between the layers of the mesentery. During the operation there was a great deal of shock and three quarts of saline solution were introduced into the veins of the arm.

The patient got well without a bad symptom, and, with the exception of a tendency to flatulency and slight diarrhoea, he was well and gaining flesh. Dr. Shepherd remarked that as far as he was able to find out this was the greatest length of bowel successfully removed, so far. Kocher, of Berne, had removed 6 ft., 10 in.; Koeberle of Strassburg, 6 ft. 6 in.; and Elliott, of Boston, 4 ft. He said that at some future time he intended writing a paper on the subject, and would deal more fully with the history of intestinal resection.

Dr. JAS. BELL considered this a remarkable surgical triumph. The difficulty of removing an enormous tumour, situated between the folds of the mesentery and displacing such important structures as the aorta and vena cava, was very great; but the removal of so large a portion of the intestine as well, was a remarkable achievement. The removal of the intestine for gangrene could not be compared with this.

Some years previously he had performed experiments on dogs, and demonstrated that considerable portions of their intestines could be removed with success. By this means he had gained considerable experience of the different methods of uniting the ends of the bowel. Of those united with the continuous suture in some cases a constriction was subsequently found at the point of union; of those done by the through and through method the results were good. He, however, had not realized then that the dog was not so

prone as the human being to suffer from peritonitis after such operations.

In man, Dr. Bell stated, he had united the cut ends in almost every way, and in cases of direct union had found the bowels closed off well when fatal results had occurred from other causes. He had been greatly impressed by Maunsell's method, especially by a modification described in the last number of the *Annals of Surgery*.

He had no criticism to offer on Dr. Shepherd's case, but wished to congratulate him on one of the greatest achievements on record in abdominal surgery.

Dr. WESLEY MILLS felt this was a great surgical triumph, but with regard to the effect of removing such a large portion of intestine the case was one from which we are likely to get physiological light rather than one on which he could throw light. His experiments upon the alimentary tract of dogs had impressed him with the danger of these operations being followed by shock rather than peritonitis.

Of late years the tendency had been rather to exalt the intestines functionally at the expense of the stomach, but both had much reserve power, and if this case succeeded it would be clear evidence of this.

Dr. LAPHORN SMITH was pleased to know that such a case had occurred, as it would encourage less daring operators to be a little more bold. He thought that much of so called shock was due to hæmorrhage, the anæsthetic, or sepsis.

Dr. WM. GARDNER thought that a point often overlooked, in considering the shock following long operations, was refrigeration, and cited a case in support of this.

Dr. G. G. CAMPBELL drew attention to a fact which he had demonstrated by examination of the urine, that metabolism was much diminished during anæsthesia, becoming less and less as time passed. Thus, during long operations this might be a cause of refrigeration.

Dr. F. J. SHEPHERD intended reporting the case in full later on and so had not given the details of the history. It was not known what shock was, but no doubt hæmorrhage was often the source of shock, and this man would have died if he had not had the intravenous injection.

A RESPIRATORY SYMPTOM OF TOBACCO-POISONING AND ITS EXPERIMENTAL INVESTIGATION.

Dr. W. S. MORROW in this paper described a peculiar form of breathing which he had observed in a number of cases of tobacco-poisoning. He read reports of the three most typical cases he had seen. The symptom referred to consisted of audible deep inspirations occurring at intervals, and often accompanied by a feeling of lack of air. He referred to a case reported by Chapman, of Louisville, at the Mississippi Valley Medical Society, in 1891, where similar symptoms were observed. He had been unable to find any explanation of this peculiar form of breathing, and had consequently undertaken a series of experiments in the hope of throwing some light on it.

He had tracings of the breathing showing the effects on it of poisoning with tobacco in rabbits and dogs; other tracings showed the effect of tobacco after first cutting the pneumogastric nerves;

others again, the effects of stimulating these nerves at various stages of poisoning. Still others exhibited the effects of various degrees of ether and chloral for comparison. As a result of these cases and experiments the following conclusions were reached :—

A fairly common symptom of tobacco-poisoning is a deep gasping inspiration, occurring at intervals, and sometimes quite audible. This may be practically the only symptom complained of. It is probably due to a paralyzing action of the drug on the respiratory centre, affecting especially the expiratory division but also diminishing the irritability of the whole centre to afferent impulses. This symptom may persist from a few days to several months after the tobacco is discontinued.

Dr. N. D. GUNN said that clinically the action of tobacco was supposed to be principally upon the heart, and he thought that Dr. Morrow should have investigated this point as well.

Dr. WYATT JOHNSTON asked concerning the occurrence of this sign in poisoning by other drugs ; if this were not the case it might turn out to be a valuable physiological test for nicotine poisoning.

Dr. WESLEY MILLS expressed satisfaction that a paper of this kind had been brought before the Society. It was the first instance in this country of such an application of the graphic method to the solution of a definite clinical problem.

Dr. F. J. SHEPHERD congratulated Dr. Morrow on having been able to verify his diagnosis by this method. Such a paper was most valuable to those outside of laboratory work from a practical standpoint.

Dr. W. F. HAMILTON asked if Dr. Morrow had considered the possibility of this respiratory symptom having been due to the influence of the poison upon the heart.

Dr. MORROW in replying to Dr. Gunn said that experimental evidence went to show that tobacco was a stimulant to the heart. He himself had seen the heart beating vigorously after death from respiratory failure in the rabbits poisoned with tobacco from which his diagrams were obtained.

To Dr. Hamilton he said that even if circulatory changes could cause some change in the respiration, they could not explain the failure of the respiratory centre to respond to stimulation through the pneumogastric nerves. He did not think the peculiar breathing he had observed could be explained through any change in the circulation.

He could not answer Dr. Johnston's questions as he was not sufficiently acquainted with the literature of other poisons.

THE CANADA MEDICAL RECORD

PUBLISHED MONTHLY.

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Make all Cheques or P.O. Money Orders for subscription, or advertising, payable to JOHN LOVELL & SON, 23 St. Nicholas Street, Montreal, to whom all business communications should be addressed.

All communications for the Journal, books for review, and exchanges, should be addressed to the Editor, Box 2174, Post Office, Montreal.

Editorial.

THE SECOND REPORT ON THE USE OF DIPHThERIA ANTITOXINS IN LARYNGEAL DIPHThERIA BY THE AMERICAN PÆDIA- TRIC SOCIETY.

We give this report in full. It presents some very interesting and instructive conclusions which are of the greatest importance to physicians as pointing to methods which will secure a lower mortality. The necessity of the earliest use possible of antitoxin is pointed out, and a fact not hitherto generally known that too small doses are used in severe cases, and two to five hundred antitoxin units are given where five times that quantity is required.

The fact that some of the samples of antitoxin were found to contain less units than what they are labeled for should lead to more carefulness in selecting supplies, and points strongly to the necessity in regard to all remedies of this kind which require the greatest care and skill in their manufacture,—for some authoritative supervision in all countries where it is produced. It is gratifying to learn that while formerly 90 per cent. of cases of laryngeal diphtheria required operation, since the use of antitoxin only 39 per cent. indicate surgical aid, and that the mortality has been reduced from 73 to 27 per cent. The committee has exercised the greatest care in arriving at these results, and has given us statis-

tical evidence of the value of this new remedy in the only way that it could be done, and has definitely established its utility beyond all subsequent cavil, and is deserving of our warmest appreciation of their arduous efforts.

BRITISH MEDICAL ASSOCIATION MONTREAL MEETING.

Substantial progress can be reported of the various sub-committees who have in hand the arrangements for the somewhat formidable undertaking of entertaining the greatest Medical Association in the world, and conducting its annual meeting to a successful issue under very unusual conditions.

The list of discussions and those who are to take part in them, the papers and their readers is being gradually completed, and we will soon be able to announce the complete programme for each section. Each section will be in session only twelve hours, and fifteen minutes is allowed for each paper, so that it is only possible, by allowing about two-thirds of the time for papers, to get through with more than twenty-five papers. It will be necessary, therefore, to make a choice, leaving the balance to be read by title. It is announced that Dr. Herman Biggs of New York will give the address on Public Medicine, and his will doubtless be among the interesting communications to the meeting.

The Provincial Government has granted two thousand dollars, making in all, with the grant from the Dominion and City of Montreal, ten thousand dollars.

This is about ten times as much as was spent at last year's meeting at Carlisle. Although necessarily costing more here than it would in Britain, doubtless with this snug amount, together with the moneys obtained from privileges in the museum, there will be funds sufficient to make a thoroughly interesting and attractive list of entertainment for the guests. We will also have to deal with the presence here of hundreds of our professional brethren from over the border, as well as with the members of the Canadian Medical Association, whom we hope to see here in full force.

The excursions committee have issued an outline programme of what they have decided upon, which we give in full.

The following is a brief outline of some of the excursions which have been arranged for the members of the British Medical Association. The rates given are single first-class one way fare. All the Canadian railways will give to members of the British Medical Association and their families single tickets for half one fare, or return ticket for one single first-class fare. The railroads in the New England States, including those coming from Boston and New York to Montreal, have granted return tickets for their lines for one fare and a third good for three days before the meeting, and three days after the meeting. The rates on the Canadian railways are good from the 1st of July to the 30th September.

The following are points which are worth visiting :

The old city of Quebec, is one hundred and seventy-two miles from Montreal ; fare, \$3.50. A very pleasant day can be spent in this old city visiting the different points of interest. From Quebec one can go down the St. Lawrence and up the Saguenay, thence to Lake St. John. Here there is a very comfortable hostelry known as the Hotel Roberval, and good Ouananiche fishing can be obtained in Lake St. John. Boats and guides are always to be had. From Lake St. John to Quebec, one can go by rail ; distance, one hundred and ninety miles.

Montreal to Halifax, Nova Scotia, distance, seven hundred and fifty-six miles ; single first-class fare, \$16.50. From Halifax one can visit the Annapolis Valley, and the Bras d'Or Lakes. There are two main lines of railroad leading from Montreal to Halifax passing through picturesque and fertile country.

Montreal to St. John, New Brunswick ; distance, four hundred and eighty-one miles ; cost, \$14.15, single fare first-class.

Montreal to Ottawa ; distance, one hundred and twenty miles ; single first-class fare, \$3.50. The Parliament buildings in Ottawa are very handsome, and well worth seeing.

A very pleasant trip would be from Montreal to Kingston by rail and down the St. Lawrence through the Thousand Islands by steamer. Montreal to Kingston, one hundred and seventy-five miles ; first class single fare, \$5.65.

Montreal to Toronto, three hundred and thirty-three miles ; single first-class fare, \$10.40. Toronto is a very convenient point from which to visit the Falls of Niagara ; distance, sixty miles from Toronto. A very pleasant trip would be from Montreal to Toronto by rail, from Toronto to Niagara and back to Montreal through the Thousand Islands and the different Rapids of the St. Lawrence by steamer.

Western trip, Montreal to Vancouver, distance, two thousand nine hundred and ninety miles ; time, five and a half

days. The cost of a return ticket to members of the British Medical Association; first-class, \$70.45, instead of the usual rate of \$135.10. The sleeping cars cost each way about \$20.00 for double berth. Meals in dining cars and at restaurants, 75 cents each. This is a trip which we would advise all members who can afford the time to take, as it will give them an impression of the vastness and resources of British North America that can be obtained in no other way. The trip is not tedious and every day is thoroughly enjoyable. The cars are comfortable, the scenery constantly changing, and of very great interest. Stop-over privileges are allowed at all points, from some of which interesting side trips can be made. From Rat Portage, the new gold fields of the Lake of the Woods, Rainy Lake and Seine River can be reached by steamer. The Canadian Pacific Railway have kindly offered to give to each member going to Vancouver over their line, free passes over all their branch railway and steamboat lines in Manitoba, the Canadian Northwest Territories, and British Columbia, thus enabling those who desire to visit Rossland and other points of interest an opportunity to do so. Those who intend to take this trip are asked to apply early so that date and accommodation may be provided. By the payment of an extra \$5.00 members may return by the Great Northern or Northern Pacific. In this way the Yellowstone Park may be visited. The Yellowstone Park is a National United States reservation and requires five days to see it all. The expenses of the trip through the Park are not included in the Railway fares. Members desiring to visit the Yellowstone disembark at Livingston on the Northern Pacific Railway. The trips from Livingston through the Yellowstone and return are as follows: Livingston to Mammoth Hot Springs and return, including transportation only, \$5.00; second, Livingston to Cinabar by rail, thence by stage to the Mammoth Hot Springs, Norris, Lower and Upper Geyser Basins, Yellowstone Lake, Grand Canon, and Falls of the Yellowstone, returning by the same route, including transportation and five and a half days' board at the Park Association Hotels, \$49.50. The date for closing the Park is October 1st. No charge will be made to passengers returning via Portal and the Soo Pacific route to St. Paul, thence to Sault St. Marie, where the Canadian Pacific is again reached.

Those who can, are advised to take this Western trip before the meeting. It can be accomplished very comfortably in three weeks.

For those members who prefer to go from Owen Sound to Fort William through lakes Huron and Superior by the Canadian Pacific steamers instead of north of Lake Superior

by rail, an extra charge of \$4.25 each way is made, which includes berths and meals. These steamers are large steel boats with all the comforts of ocean steamships. Members are recommended to go one way by these steamers.

This trip across the great prairies and the Canadian wheat fields will be at the time when the wheat is about ripe and harvesting will be in progress. The scenery through the great lakes and the Rockies outrivals that of Switzerland. Banff Hotel and the Banff Hot Springs, four thousand five hundred feet high, are in the National Park. The great Glacier is said to contain more ice than all the Swiss Glaciers put together. The scenery along the Fraser River is of the wildest and most fascinating character.

The hotels at Banff, at Glacier, and, at several other points, where members might care to stop, are thoroughly comfortable in every respect.

Those who wish to visit Alaska should leave England so that they may arrive in Montreal about the 27th or 28th of July. They can then go by the Canadian Pacific to Vancouver and get the steamer "Queen," which leaves Victoria on the 5th August for Alaska. The time occupied from Victoria to Alaska and return is twelve days; fare, including everything, \$80.00, for the round trip from Victoria.

In one month one can go from England to Canada, attend the meeting of the British Medical Association and visit Quebec and Lake St. John, or Ottawa, or Kingston and the Thousand Islands, or Toronto and Niagara, and then back to England. In five weeks all the above places could be visited.

A six weeks' trip will permit one to attend the meeting in Montreal, go across the Continent to Vancouver, and back by Yellowstone.

In two months one can, in addition to attending the meeting in Montreal, go across the Continent to Vancouver and back and visit the chief cities in Canada and the Eastern cities in the United States.

For detailed information regarding transatlantic transportation see *British Medical Journal*, April 17th, 1897, pp. 997, and succeeding numbers.

Very full descriptive information concerning places of interest in the Dominion of Canada will appear in the *Journal*, 5th June.

A preliminary guide is being sent to each member, and a full local guide will be obtainable at the meeting.

The Canadian Pacific Railway Company, in conjunction with other Canadian companies, have placed at the service of the members of the Association, a clerk who will afford all information which may be desired. He may be addressed at the office of the *Journal*, 429 Strand, London.

AMERICAN PUBLIC HEALTH ASSOCIATION.

OFFICERS, 1896-1897.

President,.....Dr. HENRY B. HORLBECK, *Charleston, S.C.*
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[Preliminary Circular.]

The Twenty-fifth Annual Meeting of the American Public Health Association will be held at Philadelphia, Pa., October 26, 27, 28, 29, 1897.

The Executive Committee have selected the following topics for consideration :

- I. The Pollution of Water Supplies.
- II. The Disposal of Garbage and Refuse.
- III. Animal Diseases and Animal Food.
- IV. Car Sanitation.
- V. Steamship and Steamboat Sanitation.
- VI. The Prevention of the Spread of Yellow Fever.
- VII. The Transportation and Disposal of the Dead.
- VIII. The Relation of Forestry to Public Health.
- IX. Nomenclature of Diseases and Forms of Statistics.
- X. Cause and Prevention of Infectious Diseases.
- XI. Public Health Legislation.
- XII. Cause and Prevention of Infant Mortality.
- XIII. Transportation of Diseased Tissues by Mail.
- XIV. River Conservancy Boards of Supervision.
- XV. The Period during which each Contagious Disease is Transmissible, and the Length of Time for which each Patient is Dangerous to the Community.
- XVI. Sanitation, with special reference to Drainage, Plumbing, and Ventilation of Public and Private Buildings.
- XVII. Some Method of International Arrangement for Protection against the Transmission of Infectious Diseases.
- XVIII. Disinfectants.
- XIX. Existing Sanitary Municipal Organizations of the Countries belonging to the Association, with a view to a Report upon those Most Successful in Practical Results.

Upon all the above subjects, special committees have been appointed. Papers will be received upon other sanitary and hygienic subjects also.

REGULATIONS RELATING TO PAPERS.

Special attention is called to the new regulation in regard to papers. Papers presented later than the time specified (on or before nine o'clock, a.m., of Monday preceding the meeting) will not be placed in the programme, for, contrary to the usage of previous meetings, the entire programme for the week will be printed on Monday preceding the first day of the session.

EXTRACT FROM BY-LAWS.

4. All papers presented to the Association, must be either printed, typewritten, or in plain handwriting, and in order to secure a place in the programme, must positively be in the hands of the Secretary by nine o'clock, a.m., on Monday preceding the first day of the meeting, in order that they may be submitted to the Executive Committee, and placed in the hands of the sub committee charged with the preparation of the daily programme of the session.

5. If any paper is too late for critical examination, said paper may be so far passed upon by the Executive Committee as to allow its reading, but such paper shall be subject to publication or non-publication, as the Executive Committee deem expedient.

6. All papers accepted by the Association, whether read in full, by abstract, by title, or filed, shall be delivered to the Secretary, as soon as thus disposed of, as the exclusive property of the Association. Any paper presented to this Association and accepted by it shall be refused publication in the transactions of the Association, if it be published, in whole or in part, by permission or assent of its author, in any manner prior to the publication of the volume of transactions, unless written consent is obtained from the Publication Committee.

7. All papers on subjects within the province of special committees shall be referred to the chairmen of the several committees, who shall report the same to the Association, incorporated with their annual reports, or refer them to the Executive Committee for consideration.

8. No paper shall hereafter be considered, of which a condensed abstract shall not have been placed in the hands of the Secretary at least twenty days before the date of the annual meeting.

9. Chairmen of committees, in making reports, shall be absolutely limited to thirty minutes, reading of papers to

twenty minutes, and participants in discussion to five minutes.

10. Papers presented to the Association shall be confined strictly to sanitary, climatologic, and preventive questions, all clinical, pathological, therapeutic, or other strictly medical statements being excluded; nor shall any paper tending to the advertisement of special or local interests or establishments be accepted.

11. The Secretary shall have no discretion in the matter of the enforcement of the regulations of the Executive Committee as to the acceptance of papers.

It is expected that the Philadelphia meeting will be largely attended. Its location is central, and the local Committee of Arrangements are already hard at work for its success.

An announcement will be made in ample time before the meeting, giving full particulars regarding reduced fares on railroads, hotel rates and accommodations, special entertainments to be arranged by the local committee, et cetera.

All communications relating to local matters should be addressed to Dr. Benjamin Lee, Chairman Local Committee of Arrangements, No. 1532 Pine St., Philadelphia, Pa. Per order.

IRVING A. WATSON,

Secretary.

A SPECIAL TOUR TO EUROPE.

Including the International Medical Congress at Moscow, August, 1897. Under the patronage of the Russian Government. To leave New York on Saturday, July 3, 1897, by the North German Lloyd steamship "Werra." Under the arrangements of Thos. Cook & Son, managers of tours and excursions, 261 and 1225 Broadway, New York.

SYNOPSIS.

Section No. 1.—New York, Gibraltar, Naples, Rome, Florence, Venice, Milan, Como, Menaggio, Lugano, Lucerne, Zurich, Munich, Linz, the Danube, Vienna, Warsaw, Moscow, St. Petersburg, Helsingfors, Abo, Stockholm, Christiania, Gothenburg, Copenhagen, Hamburg, Bremen, New York. Tour of 84 days, \$560.00.

Section No. 2.—Travel from New York with Section No. 1 round to Hamburg, thence as follows: Berlin, Dresden, Leipsic, Frankfort, Mayence, the Rhine, Cologne, Paris, Havre, New York. Tour of 93 days, \$655.00.

Optional route via Athens and Constantinople.—Travel with Section No. 1 to Rome, thence independently to Brindisi, Patras, Constantinople, Buda-Pesth, Vienna, where the party will be rejoined. Tour of 84 days, \$595.00.

Book Reviews.

The Practice of Medicine. By HORATIO C. WOOD, A.M., M.D., LL.D. (Yale), Professor of Therapeutics and Clinical Professor of Nervous Diseases in the University of Pennsylvania; member of the National Academy of Science; and Reginald H. Fitz, A.M., M.D., Hersey Professor of the Theory and Practice of Physic in Harvard University, Visiting Physician to the Massachusetts' General Hospital, formerly Shattucks Professor of Pathological Anatomy in Harvard University. J. B. Lippincott Company, publishers, Philadelphia, 1897; cloth \$6.50, sheep \$7.50, half-russia \$8.00. Charles Roberts, Dominion agent, 503a Cadieux st., Montreal.

At first thought one is inclined to the opinion, that in view of the large number of text-books on the practice of medicine already available any new venture in this line would be regarded generally as superfluous and unnecessary labor. In any case not the faintest hope of success could be entertained by any thoughtful writer unless a volume is produced equal or better than any of its predecessors. It must be remembered on the other hand that the rapid advances that are being made in pathology diagnosis and therapeutics calls for new works or frequent editions of old ones, and there is a strong desire on the part of all progressive physicians to possess the latest work bearing on his field of labor. With these considerations and the knowledge that a book is being issued which represents fully the progress made up to the time of its publication, a reasonable hope may be entertained that success awaits the enterprise.

The name of H. C. Wood is one of the best known on this continent, and any effort of his pen would be generally considered to be meritorious and worthy of perusal. That of Dr. Fitz is not so familiar, but holding the position of Professor of the Practice of Medicine in Harvard, and having formerly filled the chair of pathological anatomy, would entitle him to be considered an authority on any subject he should write upon.

The book is the result of their joint efforts. Dr. Wood is best known from his work on pharmacology and therapeutics, and all this portion of the book is written by him as well as the articles on nervous diseases, diseases of the muscles, acute and chronic poisoning, and most of the infectious diseases. There are one thousand and eighty-eight pages, and all the subjects usually considered in a work on practice of medicine are treated in six sections, each consisting of a number of chapters.

Most of the articles we have read gave us the impression of being very thorough, and while representing in detail everything relating to the subject, expresses it in terse, pointed language; hence the articles

are not too lengthy. Questionable subjects and disputed points are not allowed to take up space, so that we have only condensed descriptions representing the cream of the subject. As a rule we find the subject brought right up to date; thus we have the latest in regard to hæmorrhagic rickets; the use of the thyroid gland in myxœdema; the methods of examining the blood by the Ehrlich Biondi method and Daland's hæmatokrit; the antitoxine treatment of diphtheria. The subject of appendicitis is very ably considered and the detailed rules for its treatment medically, and when surgical intervention is indicated are in accordance with the most recent views founded on the accumulated experience of late years. The modern methods of examining the stomach and its contents are fully given.

The section on diseases of the nervous system is admirable. This difficult subject is simply classified and each affection clearly described in a brief, clear manner, as only a master of the subject is capable of doing, and this vast subject is made quite comprehensible and easy to grasp in the well written articles in this book. While the subject of treatment is very full and contains only what the author endorses and what is actually of use, we were somewhat surprised to find in the treatment of septicæmia no mention of the use of antistreptococcus serum or even pronuclein, and in tuberculosis no mention is made of any serum or allied methods of treatment later than Koch's tuberculine. This conservatism may be justified by the unsettled state of our knowledge on these subjects. While typhoid fever receives adequate treatment at the hands of the authors, we think the progress of the blood serum method of diagnosis has sufficiently advanced to have been noted in a work issued in 1897. We consider this work an admirable one for the medical student as well as the busy practitioner, containing as it does in a readable, condensed form all the essentials of medicine in its most modern aspects.

Genito-Urinary Surgery and Venereal Diseases. By J. Wm. White, M.D., and Edward Martin, M.D., of Philadelphia. A book of 1042 pages, 243 engravings, and 7 colored plates; price from \$6.50 to \$8.00, according to binding. (Montreal agent, Chas. Roberts, 593a Cadieux st.)

This work is in every way up to date, the printing is clear, the illustrations well chosen and the colored plates of skin rashes are excellent. The practical way in which the symptoms, diagnosis and *treatment* are discussed shows that the authors are practitioners who are striving to cure and mitigate "the ills that flesh is heir to," and are not merely medical connoisseurs who are satisfied after making a correct diagnosis and consider treatment a minor detail.

The subject of syphilis is dealt with exhaustively, and the illustration of cutaneous lesions are very helpful. Syphilitic conjunctivitis is touched on—an affection ignored by most authors.

The discussion of the treatment in chronic gonorrhœa is very helpful to the puzzled practitioner.

Although somewhat extensive for the student, it is not so profuse in varying theories as some smaller books, and it is well worthy of a position in the library of the busy practitioner.

New York, May 1, 1897.

REMOVAL ANNOUNCEMENT.

After having been located at or near Broadway, and Eighth Street for more than a quarter of a century, we have, in harmony with the trend of the times, fallen in line with the uptown movement; and further to meet our expanding business we have been compelled to seek enlarged and more commodious quarters.

We can now be found in the new building, Nos. 241 and 243 W. Twenty-Third Street, near Seventh Avenue.

On and after this date my sons, William H. and Edwin C., who have been associated with me in business several years, are admitted to partnership interests under the firm name of

E. B. TREAT & CO.

We are pleased to mention "in press" several new publications for early issue, as additions to our growing catalogue of medical, theological and subscription books.

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NEW BOOKS IN PREPARATION FOR EARLY PUBLICATION.

W. B. Saunders of Philadelphia announces that the following works will be issued by him during the early autumn and winter.

An American Text-Book of Genito-Urinary and Skin Diseases. Edited by L. Bolton Bangs, M.D., Late Professor of Genito-Urinary and Venereal Diseases, New York Post-Graduate Medical School and Hospital, and William A. Hardaway, M.D., Professor of Diseases of the Skin, Missouri Medical College.

An American Text-Book of Diseases of the Eye, Ear, Nose, and Throat.—Edited by G. E. de Schweinitz, M.D., Professor of Ophthalmology in the Jefferson Medical College, and B. Alexander Randall, M.D., Professor of Diseases of the Ear in the University of Pennsylvania and in the Philadelphia Polyclinic.

Macdonald's Surgical Diagnosis and Treatment.—Surgical Diagnosis and Treatment. By J. W. MacDonalD, M.D., Graduate of Medicine of the University of Edinburgh; Licentiate of the Royal College of Surgeons, Edinburgh; Professor of the Practice of Surgery and of Clinical Surgery, Minneapolis College of Physicians and Surgeons.

Anders' Theory and Practice of Medicine.—A Text-Book of the Theory and Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico Chirurgical College, Philadelphia.

Senn's Genito-Urinary Tuberculosis.—Tuberculosis of the Genito-Urinary Apparatus, Male and Female. By Nicholas Senn, M.D., Ph.D., LL.D., Professor of the Practice of Surgery and of Clinical Surgery, Rush Medical College, Chicago.

Penrose's Gynecology.—A Text-Book of Gynecology. By Charles B. Penrose, M.D., Professor of Gynecology, University of Pennsylvania.

Hirst's Obstetrics.—A Text-Book of Obstetrics. By Barton Cooke Hirst, M.D., Professor of Obstetrics, University of Pennsylvania.

Moore's Orthopedic Surgery.—A Manual of Orthopedic Surgery. By James E. Moore, M.D., Professor of Orthopedics and Adjunct Professor of Clinical Surgery, University of Minnesota College of Medicine and Surgery.

Heisler's Embryology.—A Text-Book of Embryology. By John C. Heisler, M.D., Prosector to the Professor of Anatomy, Medical Department of the University of Pennsylvania.

Mallory and Wright's Pathological Technique.—Pathological Technique. By Frank B. Mallory, A.M., M.D., Assistant Professor of Pathology, Harvard Medical School; Assistant Pathologist to the Boston City Hospital; and James H. Wright, A.M., M.D., Instructor in Pathology, Harvard Medical School; Pathologist to the Massachusetts General Hospital.

NEW VOLUME IN SAUNDERS' AID SERIES.

Sutton and Giles' Diseases of Women.—Diseases of Women. By J. Bland Sutton, F. R. C. S., Asst. Surgeon to Middlesex Hospital, and Surgeon to Chelsea Hospital, London; and Arthur E. Giles, M.D., B.Sc. Lond., F. R. C. S. Edin., Asst. Surgeon, Chelsea Hospital, London.

PUBLISHERS' DEPARTMENT.

SANMETTO IN BRIGHT'S DISEASE.

Charles F. Reiff, M.D., of Fremont, O., writing, says: "I prescribed Sanmetto in a case of advanced Bright's Disease. The patient became more comfortable, and since then has used several bottles of Sanmetto. In my opinion Sanmetto is the most efficient remedy for diseases of the genito-urinary organs, and I shall continue to prescribe the remedy."

SANMETTO IN DIABETES MELLITUS.

R. A. Miller, M.D., of Atchison, Kan., writing, says: "I used Sanmetto in a severe case of diabetes mellitus in a gentleman fifty-four years of age, in which there was an excessive flow of urine, patient having to arise some four or five times during the night, severe irritation at neck of bladder and enlargement of the prostate gland, dry hot skin, with considerable emaciation. After using Sanmetto for three or four days the trouble was greatly improved, patient not having to arise more than once during the night, and has since, by the use of one more bottle of Sanmetto, almost recovered. I think Sanmetto a most excellent remedy."

PREMATURE LABOR WITH HEMORRHAGE.

I had a most excellent case on which to try Sanmetto. It was that of a woman about forty years of age, who had a premature labor, followed by a terrible hemorrhage. She bled about two hours before I was called, and when getting there I found a pale looking form of a woman, which had fainted away twice from loss of blood. I gave her two teaspoonfuls of Sanmetto, and the hemorrhage ceased in about five minutes. She rested quietly for about one half hour, when she took to coughing, then the hemorrhage commenced again. I gave her another large dose of Sanmetto and it stopped again. I stayed with patient about three hours, and no more hemorrhage occurred, and so I went home, leaving no medicine except the part of the bottle of Sanmetto, advising the attendants to give it as directed if hemorrhage should occur again, but it did not occur again, and the woman is improving nicely now, whereas at first I thought it a hopeless case. I do believe that it was the Sanmetto that saved her. I have also used Sanmetto a couple of times previous to this case, in combination with ergot, and the effect was all right then also.

WM. B. STOKER, M.D.

LANCASTER, Iowa.

APPLETONS' POPULAR SCIENCE MONTHLY FOR JUNE, 1897.

APPLETONS' POPULAR SCIENCE MONTHLY for June contains several especially timely articles. THE EVOLUTION OF THE MODERN HEAVY GUN, by Prof. W. Le Conte Stevens, describes the wonderful advance made in this department during the last fifty years. THE SILENT CITY OF THE MUIR GLACIER is a sharp little article by President David S. Jordan, giving another illustration of the ready gullibility of the average citizen. David A. Wells's series is represented this month by a chapter on the FORMS AND NOMENCLATURE OF TAXATION, in which he deals at some length with the relative value of the direct and indirect forms. SUICIDE AND THE ENVIRONMENT, by Robert N. Reeves, is a discussion of the causes for the increase of suicide during the last decade. In the June installment of Prof. W. Z. Ripley's important series on RACIAL GEOGRAPHY, he shows that the notion of a single European or white race is untenable, and that there are evidences of three original and distinct types. GLOBE LIGHTNING, by M. Hagenau, gives a number of instances where this curious electrical form has been witnessed, and some speculations as to its probable cause. W. H. Ballou contributes a timely paper on the coming congress of the WORLD'S GEOLOGISTS AT ST. PETERSBURG. Mrs. Helen Kendrick Johnson discusses the important question of WOMAN SUFFRAGE AND EDUCATION, and shows the stupidity of the clamor for the general admission of women into men's colleges, as if women could obtain education in no other way. Some interesting data regarding the early use of alcoholic drinks are given by Dr. C. E. Pellew in a paper on THE HISTORY OF ALCOHOL. THE PUBLIC AND ITS PUBLIC LIBRARIES, by John Cotton Dana, deals with the best methods and ideals for the modern public library. The important place which science holds in modern education is called attention to by M. P. E. Berthelot. The subject of the SKETCH this month is Richard Owen, of New Harmony, geologist. PERNICIOUS LEGISLATIVE ACTIVITY and THE POSTAL UNION CONGRESS are the titles in the Editor's Table.

New York: D. Appleton and Company. Fifty cents a number; \$5 a year.

QUEEN VICTORIA'S DIAMOND JUBILEE.

In its June number *The Ladies' Home Journal* will celebrate the Diamond Jubilee in a way distinctly its own. In an article by William George Jordan, entitled "What Victoria Has Seen," the reader will be taken on the British throne, and the marvelous panorama of the world's history for sixty years will pass before him. He will at a glance see the progress in art, science, invention, music, education; the great social reforms, the growth of nations and the advance of civilization. The whole story of the world's progress of the longest reign in English history will be vividly presented.