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Original Communications.

Introductory Lecture to the Fifth Session of the Medical Faculty of the University of Bishop's College, delivered 1st Oct., 1875.—By GEORGE WILKINS, M.D., M.R.C.S., Eng., Professor of Pathology and Lecturer on Practical Physiology.

GENTLEMEN:

According to a long-continued custom amongst Medical Colleges, we open our Winter Session with an introductory lecture. This year, the duty of delivering that lecture devolves upon me. The first portion of that duty is to convey to you the extreme pleasure it is to my colleagues and myself to see the familiar faces which during the winter months of former years studiously followed our instruction; also to see the new faces which will soon be familiar ones. I think it almost needless to say, you are all heartily welcome.

But, gentlemen, may I ask you, have you seriously thought over the object you have in view in coming here? Do you think that when you have completed your term of four years study and passed the necessary examinations, and in consequence obtained your diploma, your student days will be over? Do you imagine that after that happy event, all you will have to do will be to sit quietly in your office awaiting the commands of your patients; that your spare time (of which there will be no scarcity the first few years) you may spend in idleness and frivolity? Gentlemen, thoughts such as these are the shoals of medical life. Strand upon them and there is almost a certainty of mending.

Doubtless your object in coming here is, that you can ultimately obtain the degree of Doctor of Medicine. To enable you to succeed in that object, it will be our duty and endeavor to impart to you the desired information. But you must constantly bear in mind that in our endeavors to convey to you a certain amount of information, we really do much more than that. The direction of your thoughts will be more defined. You will be taught to think systematically. You will be taught what to look for, and how to enquire. Just as the tourist bound for some foreign clime will spend much time previous to his departure pouring over hand-books, studying the route he should take, also the objects of interest on that route, you will have a mental route to pursue, and many objects of deep interest will be opened to your view before you reach your first goal. Those of you, who have already spent

one or more years in the study of your profession, will have some idea of the nature of these interesting objects as well as the amount of work before you.

To you especially I wish to address myself, at first, for a few minutes. For that purpose I will step aside a little from the usual course of introductory lectures by bringing under your notice now a few of the more prominent advances made in Medicine within the last few years. This I do to impress upon you the rapidly progressive nature of the Science to which all of you, I presume, purpose devoting the remainder of your days.

It is but fifty years since Sir Charles Bell, by careful dissection of the roots of the nerves, discovered that those of motion and sensation were quite distinct. This discovery gave rise to the still greater advance made by Dr. Marshall Hall, the reflex action of the spinal cord, by unravelling which he showed us how all the functions of the animal economy are performed independent of the will, a discovery almost as great as that of the circulation of the blood. Before the time of these great physiologists it was all darkness as to the beautiful machinery by which the functions of life were carried on. No one knew why when the light fell upon the eye the pupil contracted, and when a still greater illumination fell, the eyelids closed to shut it out altogether; why the fauces grasped anything placed within its reach; or why even in sleep the hand immediately moves away any object that may be irritating the skin. The reflex action of the nervous system at once furnished a clue to many obscure pains that had been treated locally, but which might have resulted from the altogether unsuspected irritation of some internal organ.

Following in quick succession the wake of these discoveries was that of the governing power of nerves over contraction of vessels and over the work of the glands and secretion of membranes. The recognition of nervous centres; of the comparative independence, so to speak, of ganglia; of the effect produced on their centres by reflex irritation and by direct irritation by the circulation of poisoned blood. All these and other similar discoveries have occurred within very few years. Our knowledge of these explain the group of symptoms which under the name of Metastases used so to puzzle our forefathers.

Within the last five years, most important experiments have been made, resulting in being able to localize the functions of the brain. Contrary to the universally received opinion, the cortical grey matter of the brain—the Cerebral Hemispheres—have been

proved to contain centres for voluntary motion. The individual convolutions are separate and distinct centres. Electrical irritation of well-defined and limited portions of these convolutions give rise to certain definite movements of the limbs or face, usually of a combined nature. Other new facts of quite a different nature are due to Dr. Parkes of the Army Medical School. He fully expounded, by experiments of his own, the celebrated observations of Fick and Wislicenus, that gave the decisive blow to Liebig's theory which prevailed for so many years—that muscular work is dependent on, and *proportioned* to the destruction of muscular tissue by oxidation, this destruction being represented by the amount of urea formed. His experiments prove that the elimination of urea is *not* dependent on the amount of muscular exercise, but on the amount of nitrogenous food taken—that muscular tissue does not consume itself as a fuel doing work; also that it is the gland cells, especially those of the liver, that we have to look to as the organs of this transformation. Parkes admits with the Swiss physiologists that some muscular tissue is disintegrated through muscular exercise, but it is the wear and tear of the engine through continuous work and not of the fuel consumed which keeps the engine at work. We see the important bearing of these facts in pyrexia. The febrile state involves a large destruction of nitrogen-containing tissues, which are hardly consumed at all in health. Every degree of fever heat, or of heat above 98° 4, implies so much additional destruction of the most important organs of the body, such as the heart and muscles and nerve-centres, as well as corresponding addition to the work of the excreting organs; further—according to the older notions, it was the kidneys that were blamed for the red deposits in the urine. According to our present views, the liver is the organ that should be blamed, the disintegrating tissues being transformed into urea and uric acid by that organ.

Other experiments of Parkes are some with reference to alcohol, which prove that it never increases the temperature, as was formerly supposed; on the contrary, that it slightly diminishes it. He also upset the theory of Lallemand's, that alcohol is not oxidized in the body, but excreted unchanged.

Perhaps some of the most interesting and important results of experimentation on the lower animals are those in connection with tuberculosis. Tuberculosis can be transmitted from mankind to animals, and probably from these back again to the human

species. Laeunec considered tubercle a special and peculiar product. In 1865 Villemin announced the production of tuberculosis by inoculation, and thus seemed to establish its specific nature. The researches of Burdon-Sanderson, Wilson Fox, and others prove that the inoculation of many kinds of noxious matter might give rise to tubercle; that tubercle is a result of inflammation, with this addition, that the presence of a special structure impresses on it a special form. These are very important facts for us to bear in mind; more especially when we have it stated on the best authority that fully one-half of the cattle slaughtered die more or less tuberculous. The microscope has demonstrated that these masses are identical in structure and development with tubercle in man. When you remember that the powers of absorption in the infant are very active, and that milk enters into most of their food, you can readily perceive what an important bearing this question of transmissibility may exert.

The researches in connection with the constituents of the blood have resulted in very materially modifying our views especially with respect to the white corpuscle, the most striking peculiarity of which is its marvellous inherent power of spontaneous motion, only quite lately recognized. The constituent molecules of which this apparently insignificant little body is made up, are incessantly dancing hither and thither, and rolling over and over among themselves. It is continually changing its form, protruding now one part and now another of its outer surface, and twisting and contorting itself into all sorts of indescribable shapes. It can be seen insinuating itself into and through the finest slits and pores, by first pushing forward the minutest finger or feeler of its substance into the available chink, and then bringing after the feeler all the rest of the corpuscular mass in the same attenuated way, until the opening is passed, when the corpuscle forthwith expands to its larger dimensions in the less restricted space beyond. The peculiar motion of these little bodies has done much to very materially alter our views on the great subject of inflammation, which underlies so much of pathology.

Thirty years ago Rokitansky taught alteration of the fluids of the body; especially of the blood, to be the cause of most morbid changes. These views for a time prevailed, but only to be superseded by the celebrated cellular pathology of Virchow, who traced all to growth of cells. This theory was supplanted to a great extent by Cohnheim's discovery in 1867, or rather what he considered his discovery, the

migration of the white blood corpuscles. Fortunately, however, for English reputation this was an old English discovery revived. In 1839 Addison discovered and described this emigration in inflammation. Now adays the prevailing theory of inflammation is, that associated with this condition there is migration of the white blood corpuscles and increased activity in the movements of the wandering cells normally present in connective tissue, also, cells which under ordinary circumstances are motionless send out processes and assume all manner of shapes.

Within the last two years, much additional light has been thrown upon the purposes served by serous membranes. Formerly held to have no other function than that of furnishing a smooth and well lubricated surface, enabling parts that are subject to movement to glide easily over each other, they have been demonstrated by Recklinghausen to represent great lymphatic sacs, and to possess a highly complicated structure, and very important relations. Dr. Klein of the Brown Institution, London, has been able to demonstrate that the endothelium of the free surfaces of serous membranes, as the pleura, mediastini, omentum and others, possess other than the flat tessellated epithelium; there is present what he calls "germinating epithelium"—spheroidal cells resembling lymph corpuscles. These lymph cells make their way into the lymphatic system through small openings distributed over the membrane bounded by peculiar cells, which in their general appearance have some resemblance to the stomata seen on the under surface of the leaves of plants. We have thus opened to our view in serous membrane, a lymphatic gland covered with germinating cells which develop into white blood corpuscles ministering to the production and development of blood.

And yet, speaking generally of these white corpuscles, they do not remain in the blood-fluid. They are moved along by the forces which circulate it, until they again enter into the composition of the solid tissues by penetrating the walls of the bloodvessels, when they wander about freely in these tissues in the manner described a few minutes ago. The floating blood cells are really the very cells which once formed the substance of the lymphatic glands, serous membranes, spleen and other organs.

How very different these ideas are from what was taught but a very few years ago!

A very important late discovery is the inhibitory power possessed by certain nerves, or according to some physiologists, inhibitory centres; that is to say, a restraining centre possessed by some, if not by all

nerves,—a centre which when excited overrides the motor centre and suspends its influence. The vaso-motor nerves, for instance, formerly considered to possess fibres whose only office was to keep in a state of moderate tonic contraction the smooth muscles of the blood vessels to which they were distributed; recent advances in physiology show that these nerves also possess in part of their course fibres which when brought into activity diminish the vascular tonicity. The vaso-motor nerves present in their course and near their extremities certain ganglia and connected with these ganglia are fibres or according to some physiologists other nerves possessing an inhibitory or restraining power over the generation or discharge of their motor force. If these be excited, the action of the motor ganglia is suspended, and the vessels no longer receiving the force requisite for their contraction, yield to the pressure of the blood and undergo dilatation. A very striking instance of this inhibitory power is the suspension of the ordinary tonic contraction of the blood vessels of the abdominal viscera by irritation of a certain nerve (the "cardiac depressor" of Cyon) which runs from the heart to the medulla. Another instance of this inhibitory influence is the remarkable power which the pneumogastric nerve possesses when stimulated of arresting the heart's action—not in systole, not, as it were, in a state of cramp; but in diastole, that is to say in a state of relaxation.

This, with many other interesting facts in physiology and pathology, you will have practically demonstrated to you during the session.

At the present day, perhaps no single subject is engaging the attention of scientific Medical Men as much as the part played in disease by that low vegetable organism called bacterium, and described according to the species under the various names of Micrococcus or Microzymes, Spirillum, Vibrio, Bacillus and Spirochæta. That these organisms exist and are sometimes found in the blood, all pathologists seem to agree, but as to how they get there, there seems to be a great divergence of opinion. Some able authorities say they arise *de novo*, that they are actual pathological products, being engendered within the body; while others, equally able, say they do not originate from the normal tissues but are derived from without. They further say that bacteria exist in the exudative fluid of all acute infective inflammations, and that they may also be found in the blood of the infected animals. This contagious nature of bacteria is by no means settled. Nevertheless it is now generally acknowledged by pathologists that a few

specific diseases are associated with specific forms of these vegetable organisms. At present there are but four affections in which these specific forms are known to exist; they are small-pox, sheep-pox, splenic fever, and relapsing fever. In small-pox, for instance, the fungus consists of minute spheroidal corpuscles, which rapidly develop by fission into groups, chains, &c. The other diseases I have just mentioned are each characterized by special forms of fungus.

Besides these diseases associated with specific forms of vegetable life, there are others depending upon the infiltration of the tissues with septic microphytes, or, as they are sometimes called, micrococci, one of the forms of bacteria just referred to. Two are at present known—diphtheria and erysipelas; the infiltration with these low forms of vegetable life being the starting point of the diseases.

Experiments such as inoculating the cornea by puncturing it with a needle charged with diphtheric material has resulted in the infiltration of the lymphatic canicular system with myriads of these low organisms. Their discovery in erysipelas is of but very recent date—within the last few months. Large numbers of bacteria have been found in the fluids of the swollen parts.

It is the microscope chiefly that we are indebted to for these recent discoveries. No single instrument has done as much for Medicine as it. In connection with it, much new and important information has been afforded us by the use of the hot stage, by means of which objects can be examined under conditions more nearly approaching those occurring in the human body. It has helped very materially to enlighten us as to the amœboid movement of the white corpuscles of the blood and the wandering cells of the connective tissue. The moist chamber, the use of immersion lenses, and the application of electricity have all been of immeasurable benefit. Before the more general use of the microscope, our knowledge of the diseases of the nervous system was very meagre indeed. Through it insanity is no longer a disease of the mind, but of the brain. It is only since Bright's discovery that the processes of degeneration have been studied. Now, through the microscope, the study of these processes is one of the most important in Scientific Medicine. The changes occurring in inflammation have been made out chiefly through this instrument.

Every day the knowledge of the laws of the various branches of physics is becoming of increasing importance in Medicine. Most of the recent advances in physiology and pathology have been the

result of using the wonderfully ingenious apparatus invented by Marey, Ludwig, DuBois, Reymond, Helmholtz and others—cylinders revolving with great rapidity and perfectly regular movement; levers adapted so as to measure the minutest movements; chronographs to record periods of time so short, that they are measured by the almost imperceptible vibration of the tuning fork; mechanical apparatus with the aid of which artificial respiration can be maintained for hours. All of which instruments you will all have the opportunity of seeing at work in the physiological laboratory in connection with this College.

In fact it may be said that every improvement in the delicacy and accuracy of our instruments has been, as also it will surely hereafter be, followed by a corresponding advance in our knowledge of the functions of the body. These functions have one by one been investigated and explored, and in consequence the problems of life are step by step becoming solved. "Vital" phenomena are disappearing with the discovery of new facts, founded chiefly on our increased knowledge of the laws of physics.

The application of these laws are readily seen in some of the better understood functions and organs of the body. The heart of man is constructed upon the recognized rules of hydraulics, and with its great tubes is furnished with common mechanical contrivances, valves. The eye is arranged on the most refined principles of optics: its cornea and humors and lens properly conveying the rays to form an image; its iris, like the diaphragm of a telescope or microscope, shutting out stray light, and regulating the quantity admitted. The ear is furnished with means of dealing with the three characteristics of sound; its tympanum for intensity, its cochlea for pitch, its semicircular canals for quality. Atmospheric pressure on the descent of the diaphragm fills the air passages with air. Many other facts of a like nature might be mentioned, all tending to point in one direction, the operation of law.

The novelties in the other branches of the profession I will leave to be dealt with on a future occasion by some other professor, merely mentioning three or four of the more important. Perhaps the most important is the introduction of bloodless surgery by Esmarch, which very much facilitates operative interference. Pneumatic aspiration has been of signal service in a great variety of cases, such as hydrothorax, retention of urine, strangulated hernia and many other diseases. The galvanic cautery and knife has also done much to simplify operations such as the removal of the tongue, naevoid growths, &c.

I have yet to mention one instrument which is extensively used of late years, and without which no medical man should attempt to practice his profession—I refer to the clinical thermometer. The use of this little instrument has been more instrumental than anything else in placing the treatment of fever on a sounder basis. Typhoid fever especially, it is impossible to treat rationally without the use of the thermometer. This I assert, not merely as my opinion but as the opinion of the highest authorities everywhere.

When I tell you that most of the facts I have now brought under your notice have been brought to light only within the last eight or ten years, some indeed later still, you may be able to form a fair idea of what you are to prepare for in order to be first class physicians. And yet these are but a very small proportion of new acquisitions to Physiology and Pathology, as well as of what previously appeared to be well established facts ruthlessly upset, and upset as I have just mentioned within the last eight or ten years. Indeed it is within the lifetime of some here present—not yet fifty years since Richard Bright recognized the relationship between kidney disease and some forms of dropsies. Then Laennec's application of the ear to discover the normal and abnormal action of the heart and lungs had not yet completely impressed medical practice.

What a chaotic state medicine must have been in previous to this period!

It is quite certain from the impulse which the last few years has given to the progress of medicine, that it will continue to advance quite as rapidly. Consequently your mind must be trained so as to be able to appreciate new facts which each successive year brings into notice. This can be done only by studying in a methodical manner, and with a scientific spirit. The physician is not now the great medicine man he used to be, whose skill was measured by the quantity of physic he could persuade his patients to swallow. At the present day too many I fear for the good of their patients go too far in the opposite direction, relying on "Nature," requiring much faith in the physician on the part of the patient. And yet what a power this faith in the physician is, and he who can command it may throw much of his physic to the dogs. Nevertheless, faith stops short of actual bodily derangement; it will not cut short a fever, nor set to rights the lung of a consumptive patient, nor give motion to the paralyzed arm. In such cases where destruction of the vital parts has ensued, the mere mockery and snare of the homœopathic treatment is at once

apparent. And here the specific value of certain drugs discovered during the last half century steps in to restore the balance to the orthodox practitioner. Among these may be found first and foremost cod liver oil that has stayed the hand of the destroyer in many a patient that would otherwise have succumbed to pulmonary disease. Iodine, gallic acid and hydrocyanic acid have proved of great value; electricity, a most potent agent in rousing the vital powers of the system. In cases where the heart's action has stopped, the constant current has once more set the machine of life going again. By hydrate of chloral, on the other hand, overaction of the nervous system is met and checked, and all the evils of opium—sickness, constipation and headache—are avoided.

As well as these actual additions to the agents by which the physician fights disease we have now a much more effective and scientific method of applying them. The modern discovery of the alkaloids or the active medicinal principles of our vegetable materia medica is very important. Instead of coarse bark, Science now presents us with the elegant quinine. Instead of the nauseating dose of jalap, an infinitesimal dose of jalapine is more effectual. And morphia with a drop seals up our senses when the larger dose of opium defeated its object by refusing to remain upon the stomach. Even the mode of administering this and many other powerful drugs is greatly improved by the subcutaneous injection.

A few words with respect to Hospital attendance. The Hospital is the practical laboratory of the Sciences of Medicine and Surgery. My personal advice to you in that matter is to begin it at once; you cannot commence too soon. Others, I know, will differ with me in that respect. I should advise each of you to attend longer than the statutory period of one year. Those of you whose home will be in the country may never be able to come again. The loss or neglect of it now you will never cease bitterly to lament: for really, it is the most important part of your medical training, and yet of no use without your teaching here.

It is in the ward of an hospital that you will see living examples of the various affections which are treated of within these walls. There you will learn the practical application of the principles of diagnosis. You will also be able to observe the manner in which disease or accident becomes amenable to treatment or baffles the skill of the physician or surgeon; and let me tell you that if you wish to become successful practitioners of medicine, you must begin early to observe the phenomena of

disease, to familiarize yourselves with its various aspects, and to learn the manner in which the examination of a patient should be conducted.

But, gentlemen, there is a most important method of studying disease which can be learned as well in your own domicile—one which, I fear, is altogether too much overlooked. I refer to making yourselves familiar with the physical signs of health. You must accustom your ears to the healthy sounds of the heart and lungs. Your eyes must be taught the healthy appearance and shape of the body generally, as well as of the deeper seated parts, such as the fundus of the eye, the larynx. Your fingers also must be educated to indicate the healthy limits of the healthy organs.

You must fully make up your mind to work hard, and to do so unremittingly. You must concentrate all your attention on the profession you have chosen. Look neither to the right nor to the left, but resolutely determine to succeed. To do that is to secure success. In order to be successful you must have an object in view. Let that object be the foremost position in the ranks. You cannot all be field marshals, but some of you can, and it is by hard work. But in order to work hard you must avoid the many temptations of a city life. Plutarch in his life of Pericles says: "There was in the whole city but one street in which Pericles was ever seen, the street which led to the market place and to the council house. He declined all invitations to banquets, and all gay assemblies and company. During the whole period of his administration, he never dined at the table of a friend."

Now I do not advise you to keep strictly to the streets leading from your residence to the College or Hospital, for I know very well you would not take my advice in that respect; but I do advise you to refrain from all public amusements during the ten weeks previous to your Christmas holidays as well as the ten weeks after—if you do not you will lose your field marshalship.

Before I finish I should like to impress upon each of you the important responsibility you incur in becoming students of this College. Remember that you are alumni of a Medical College which is yet, as far as age is concerned, in its infancy. At this infant period, every student quite as much as every professor whose name is enrolled on the college list are the subjects of criticism and analysis as is usual in the infancy of all institutions. For that reason names now on the rolls in years yet to come will be historical. You gentlemen will be important actors in the history of Bishop's College. Strive also

to be equally important in the pages of the History of Medicine. Do not act on the principle that the successful surgeons and physicians are giants with six fingers and six toes—irregular sports of nature. The great man whatever may be his calling or in whatever sphere he may move is the normal man. The average man is not the normal man. He certainly cannot be the being of whom Shakespeare says:

"What a piece of work is man! How noble in reason! How infinite in faculties! in form and moving how express and admirable! in action how like an angel! in apprehension how like a God! the beauty of the world! the paragon of animals."

Gentlemen, act so that this soliloquy may be applicable on observing each of you, and if you do, you may rest assured that Bishop's College will always be proud of you.

Ophthalmic Cases, by Stephen Dodge, M.D., of Halifax, Nova Scotia. Read before the Canadian Medical Association, Aug. 4th, 1875.

MR. PRESIDENT:

I was not aware until a day or two since that I was expected to prepare anything for this Meeting. However, in order to give variety to the subjects considered, I have selected from my note-book a few cases that may prove of general interest, avoiding in the selection such cases as involve the minutiae of ophthalmology. In adopting this course I believe the object of this Society will be more fully realized than in the consideration of questions of a theoretical or abstract nature in any department of our profession.

The first case which I shall relate is one of Exophthalmos with the existence of a sinus at the orbital border of the superior maxillary bone, corresponding to a point midway between the outer and the inner canthus. James H—, aged 22 years, received an injury to the left eye in December, 1873. Consulted me on June 4th, 1875. Says a splinter of wood was projected from a circular saw, while he was engaged in a saw mill, and struck him on the brow just above and near the inner corner of the eye. The skin was not broken, but the eye rapidly became red and the lids swollen so that he was unable to see for 3 months, the lids covering the eye completely. When the swelling began to subside, so that he could raise the upper lid with his hand, enough to slightly uncover the eye, he could see but very little. During all this time he suffered a great deal of pain, and he was told the eye projected beyond the other. After about 4 months from the time of receiving

the injury, blood and matter discharged very freely through the nostril and mouth. At first the discharge consisted chiefly of blood. This recurred at intervals of a few days, the quantity of blood gradually diminishing and that of pus increasing. After about 2 weeks the total discharge gradually diminished, until finally after about 4 weeks, as nearly as he can recollect, it ceased, with the exception of an occasional discharge now and then of a small quantity of matter. About this time the swelling of the lids began to subside, yet the projection of the globe slowly increased for about 8 weeks. The eye was very sensitive to light, and the movements of the globe very painful and limited in extent. There now appeared below the eye a point of tenderness, which soon discharged matter very freely, daily for a few weeks, and after a short time, up to the present, at intervals of about a fortnight.

At present the eye-ball projects considerably, nearly to the level of the brow, and is displaced downwards, so that the pupil occupies a lower level than that of the other eye. The upper lid is drooping, swollen a little and coursed by enlarged vessels. The cellular tissue above the globe, especially towards the inner corner, is thickened; the eye itself sensitive to light. Vision 20-40 Reads No. 3 J. Movements laterally nearly equal to the other eye; but upwards, motion is very much restrained and painful, especially across the brow. The lower lid is drawn downwards from adhesion of the integument and connective tissue to the superior maxillary bone at the orbital border where the fistulous opening exists. On pressing upwards with the forefinger beneath the orbital border of the frontal bone and over the frontal sinus there is very decided tenderness, not from pressure upon the soft parts but when it is made upon the orbital plate of the frontal bone. The probe enters the fistulous opening about an inch directly backwards, when it comes in contact with the globe, and cannot be passed beyond. Warm water injected through the fistulous passage always come out through the nostril of the corresponding side. In its passage he always said he felt it beneath the brow, in the sinus. The tension of the globe is above the normal. On testing for double images they were found to be 2' apart when the light was placed 10' distant. The ophthalmoscope shows a slight fulness of the veins of the disc.

That there was originally an abscess of the frontal sinus emptying itself through the middle meatus of the ethmoid bone into the nasal cavity, I think there can be little doubt. The persistent tenderness

upon pressure of the orbital plate of the frontal bone shows that periosteal inflammation still exists, and that it is at this spot where destruction has occurred of the thin bony partition between the orbital cavity and the frontal sinus. Over the orbital part of the ethmoid *no* tenderness is produced upon pressure.

With a small hard rubber syringe, having a long fine nozzle, such as is used by dentists, I daily injected warm water with a few drops of tincture iodine in it, increasing the quantity of the latter from day to day. Internally I gave iodide potassium 5 grs ter die. On the 14th June the eyes were tested for double images which were now found to be 11' apart when the candle was placed 10' distant. The mobility upwards of the eye is increased and is without pain. Sensitiveness to light very much diminished. The projection of the globe remains about the same. He was now obliged to leave for home, but he was advised to continue the injections and the medicine. I have heard from him twice since. The last time he writes that he has been at work about a month and feels better than he has been for some time. The discharge from the fistulous opening is less than it was, and the two lights are becoming still nearer, and that the eye does not project so much as it did.

Since this case came under my care I have received he report of one, very similar in many respects, that was under the care of Dr Noyes of N. Y. In his case, which was under observation for more than two years, the disease began as a chronic orbital periostitis, resulting in an abscess which produced erosion of the thin bony wall covering the frontal sinus. The Dr. passed a knife down to the depth of about $\frac{3}{4}$ of an inch into the cellular tissue at the upper and inner angle of the orbit, and pus was discharged for a long time, leaving a sinus into which he succeeded in passing a probe into the opening in the bony wall of the orbit. He was able to inject water into the frontal sinus, but it did not pass into the nasal cavity. He succeeded in arresting the discharge with daily injections of water diluted at first with tincture myrrh, and then, with water to which a little chromic acid was added and finally the fistula healed.

The second case is one not so rare among those engaged in seeing cases of eye disease: viz., detachment of the retina—a disease which more especially occurs among those who are short-sighted. Andrew C., aged 60 years. Sight always good, except occasionally he has what he calls a "nervous glare" coming over his sight. Always able to read

without glasses and by lamp light. Subject to a nervous headache, but never had what he calls real pain in his head. Troubled with flatulence which causes dizziness. Occupation that of a shoemaker; yet for the last 10 years he has been engaged in an out-of-doors traffic. Drank very hard formerly, and for a long time, but for four months previous to his impairment of sight, which occurred a fortnight ago, he has not drunk any. Never smoked. About the time his sight failed, he was very much oppressed in his nervous system, scarcely able to raise himself, pains and stiffness in his limbs. The sight of the left eye was lost suddenly and entirely without any perception of light, while that of the right has also failed lately. Has had some returning sight in the left eye, so that he can see his hand moving before him. Ophthalmoscopic examination shows detachment of the retina over a very large part of its surface. In the region of the macula there is also detachment. In some parts of the fundus the blue wavy appearance caused by the folds into which the retina is thrown is very beautifully seen in the upright image. There is also slight opacity in the centre of the vitreous. Vision was limited to a very small space at the extreme temporal side of the visual field. The symptom of metamorphopsia was present, and those sudden fluctuations in vision caused by parts of the detached retina floating across the line of sight.

Now, I do not present this case as containing anything peculiar when compared with other cases of the same disease. He was advised to go home and leave the eye alone, as it could not be helped, and to take especial care of the other. And it is here that I wish to say a word: You have all heard, no doubt, of those "eye-cups" that are so largely advertised throughout the length and breadth of the country. New York appears to be the great centre from which they emanate and, strange to say, if you were to visit that city you will hear nothing of these men who advertise them nor of their fame. Should you have any disease of the eye and ask for some person of well-known skill and reputation you will not be referred to Dr. So-and-so of eye-cup notoriety. Further, their address, as indicated by their advertisements, is not where the respectable and skilful medical men of the city live, but where no N. Y. man would expect to find a first-class medical man. Again, let us consider the nature of these so-called eye-cups. Here is one that was given me as a fee by a poor woman who became suddenly and completely blind in both eyes within the space of a fortnight from amaurosis. It acts upon the principle of the

cupping glass,—in fact an exactly similar apparatus, though a little larger is made by the Surgical Instrument makers for a cupping glass, and costs about a dollar, but these sell for about 8 dollars a pair. Now the remarkable thing about this contrivance is that it is recommended for conditions the very opposite of each other, and, in fact, for almost all diseases to which the eye is liable. It so happens that I have met with several cases of detachment of the retina in which this affair has been used. One was a young man from the country whom I saw last summer. He had atrophy of the optic nerve in one eye and detachment of the retina in the other; sight so bad that he was obliged to be led. He was applying the eye-cups to both eyes and several times a day. I recollect another case of a man about 60 years of age, who was a farmer. Had retinal detachment in one eye. I told him to go home, and be thankful that he had one eye left and take good care of it. He was, however, persuaded to get eye-cups and use them so as to *preserve* the sight in the other. But the poor man after some months lost the sight of this, too, and this time, to my satisfaction, did not come to me but visited my friend Dr. Agnew of New York, who, I understood, found a state of disease in this eye similar to that of the other. Now I think you will agree with me that if such a contrivance can exercise any influence upon the interior of the eye at all, such a disease was the worst possible in which to use it, and I have reported this last case more especially to draw the attention of medical men in general to this contrivance and urge upon them to discourage its use. Putting the case in the mildest form, if it does no harm, it often leads on the part of the patient to the loss of most valuable time and opportunities.

The next case is one of hypermetropia with astigmatism: Charles D—, 15 yrs old. His father and mother say that they have noticed for some time that he had some difficulty about his sight. His mother said he often fell down stairs; and did not know the cause of it. But when he began to read she was then satisfied his sight was defective. He was obliged to hold the book very near him and to sit as closely to the window as possible. His mother said she often placed him upon the window ledge to get a strong and bright light. His father consulted an optician in London about him, and purchased a pair of double concave glasses, as it was supposed to be a case of short-sightedness. But with these he was unable to read at all. Latterly he has been wearing a pair of Lazarus and Morris' glasses. Without these he cannot read at all, and even with

them he is obliged to hold the book so near that he puts his accommodation to the utmost stretch. However his sight has improved since he began to wear them. There is a tendency to convergent strabismus, which increases under accommodation.

Sight L. 20-70; S. R 17-200 Reads No 3 J at $4\frac{1}{2}$ "inches." With the weakest concave glass he is unable to read at all, so that the positive part of the relative accommodation is nil, the whole reserve power being called into action in reading. Hence it is readily seen that Vision would be painful if kept up even for a short time. The fundus of both eyes congested and discs hyperæmic, and in the L. E. near a branch of the retinal vein, which is next the nose, there is a small spot where hemorrhage has formerly occurred, and around its border there is now pigment.

Applied a 4 grs sol. atropine to the L. E. Next morning found there was hypermetropia 1-7 with convex astigmatic glass 1-16, axis perpendicular. With this combination he could read ordinary type quite readily at 7" distance. His parents were very anxious that he should attend to his studies, as up to this period his mother had taught him orally for the most part. In the meantime I ordered him a pair of double convex glasses, 9" focus, and he left to attend the academy at Wolfville. In about a month he returned at my request, his S. now for the R. E. was nearly 20-50 and for the L. 20-100. He now read No. 1 J. easily at 7." June 4th, 1875, says he has been able to continue his studies during the winter without any trouble from his eyes, though he was obliged to study hard in order to make up for lost time, and qualify for matriculation at college in the spring. With his glasses his sight is the same as at the last visit, but with his Hypermetropia and astigmatism corrected his vision for the R. E. 20-50 and for the L. 20-70. I then ordered him a pair of glasses to fully correct his refraction.

Now I do not report this case because of its rarity, as such cases are often met with. But it represents a *class* that constitute a large proportion of eye patients. In practice in a large city it has been computed that about 50 per cent of eye cases belong to errors of refraction including accommodation and mobility. Their importance at once becomes manifest, and, from a scientific point of view, it is still greater, as the treatment of these defects is allied more closely to the exact sciences than is any other branch of our profession. For their correction we call to our aid the science of optics. Yet it must not be supposed that all which is necessary for

a deficiency or excess of refractive power is simply to prescribe a plus or minus glass,—collateral facts have to be considered. Again treatment in order to be successful, preserve the sight and relieve pain in the visual act, must be commenced early in life, before secondary changes have occurred in the interior of the eye.

Remarks on Climatology, by Le Baron Botsford, M.D., of St. John, N.B., President of the Canadian Medical Association, read before the meeting of the Association held in Halifax, August 4th, 1875.

Climate holds a prominent place among the many hygienic influences which affect the well-being of men, and for this reason the Association has appointed a Committee to report upon it. Yet, considered by itself, however intimate our knowledge of the conditions which surround us, the geological formation, the geographical position, the prevalent winds and annual precipitation, the temperature and moisture, all these will not avail, and we shall be unable to estimate their effect upon the general health and longevity of a people, unless accompanied by statistics, upon other points. We require to have a periodical census, to know the immigration, as well as the emigration, the births and deaths, the prevalent diseases, those which are contagious, those which are epidemic and indigenous, all these are necessary.

For a census, without returns of those who come or go from the Province, would not give us the natural increase nor the correct death-rate and without all these data we cannot ascertain whether a locality or province is healthy.

Bay of Fundy and the St. Lawrence, and these approximate N. E. & S. W. The Kennebecasis and the Upper Petitecodiac occupy the trough formed by the two southern granitic Ridges. The Washademoire, New Canaan, and the Bucouche drain another section. The Grand Lake, Salmon River and Richebucto another, the S.W. Mirimichi, and the Nashwak, another; the Nepisiquit, the Tobique, and Restook another. The Upper St. John runs with the strike of the rocks for 100 miles before it enters the Province, after which the river runs diagonally across the strike, receiving its numerous tributaries from the N. E. and S. W.

The Carboniferous basin, occupying over 6000 square miles, has a base line of 150 miles, extending from the Bay Verte to the Nepisiquit when the Carboniferous strata terminate. The apex of the triangle is at the Oromocto Lake. The basin occupies part of Gloucester, York, Sunbury, Queens, Kings

New Brunswick lies between the 45 and 48° degrees of longitude and extends over nearly four degrees of longitude. Its western side borders on the state of Maine, its northern boundary is formed by the high lands and the Bay Chaleur; its eastern is washed by the Gulf of St. Lawrence, whose water sweep in a curve formed by Nova Scotia and Cape Breton which stretch some degrees toward the N.E.—and along its southern border lies the Bay of Fundy.

The geological character of the Province shews the surface to be ridged, and that the ridges run in a north-easterly and south-westerly direction. Besides the minor elevations there are others of importance; the chief is the one skirting its northern border. From 27 points of observation the average height of these high lands is 1550 feet, whilst several of the mountains are over 2000 feet, and one 2500 above the level of the sea. The next is a central granitic belt, extending from the Nepisiquit near Bathurst across the County of York to the American boundary, 160 miles, to the Cheputneticook lakes, having a width varying from one to twenty miles. The southern granitic belt on the coast of Maine divides as it reaches the Provincial boundary. One range crosses the St. John river at Granite quarries and extends to Butternut Ridge; the other passes to the north of Magaguadavic Village, then close by the city of St. John, and terminates at Shepody mountain in Albert. These two ranges occupy a large part of Charlotte, Kings, Queens, St. John, Albert, and Westmorland. The southern branch, running between the Bay of Fundy and the valley of the Kennebecasis at one point is over 1000 feet above the sea-level.

The direction of all these ranges and bridges, which to a great extent determine the courses of the rivers, which drain the Province is the same as that of the largely, all Westmorland, Kent and Northumberland and part of Albert. The base line runs over several ridges in its course, but the highest does not exceed 280 feet above the sea-level. The geographical features of a country are chiefly dependent upon its geological structure, and the numerous streams and rivers which are the result of the conformation, and intersect the Province, make New Brunswick a remarkably well-watered country.

The general temperature varies but little from that of the other Provinces, but there are local modifications dependent upon the waters of the Gulf upon the east coast and of the Bay of Fundy on the southern, and also from the prevalence of southerly winds during the summer months.

These, according to Murdock, prevail from the east to south-west for 74 days of the 92 of the summer season. The southern and south-west coast of Nova Scotia must be similarly affected. As Nova Scotia and Cape Breton extend some degrees in a north-easterly direction they protect the eastern coast of New Brunswick from the chilling fogs which accompany the S.E. winds, and the air is so tempered that the inlets and bays of the Gulf coast afford the most refreshing retreats from the heats of the interior and must soon become the resort of those who wish to avoid for the summer months the enervating heats of southern cities. During the winter I am not aware that the degree of cold is less than it is in the interior, which has a monthly mean of nearly 4 degrees lower than the coast of the Bay of Fundy.

The maximum of cold at St. John was 17°—at Fredericton it has reached 38°—and ten degrees between the two places is not unfrequent. During the summer the mean difference is about 3° to 4° and 5°, the interior being so much warmer, but during the winter months the latter is colder than the coast by 7° mean. The following table,* though imperfect and meagre, gives some meteorological data to determine the difference which prevails in different parts of the Province.

The south coast has a greater amount of moisture than the interior, owing to the prevalence of the southerly winds in summer, which come loaded from the Gulfstream. The temperature of that body of water off the Southern States, from the Mississippi up to Cape Hatteras, is above 80° from June to October—Above 7° during January, February and March, and above 75° in April, May, November and December, and the difference of temperature between the waters of the Gulf Stream and the Arctic current between that stream and the Coast varies with the seasons in the spring months being as much as 30 degrees, at other seasons from 15 to 23 degrees. From observations furnished by Dr. Fisher of the navy, the temperature of the inner belt of cold water running down the American coast is 56 degrees. The winds which cross the Gulf Stream become saturated with the evaporation, from the surface, then, coming into contact with the Arctic flow down the coast, are cooled down. Losing their capacity for moisture, this is carried along in the form of fog until it strikes the Atlantic coast, thence along the Bay of Fundy, the western and southern shores of Nova Scotia, and abounds on the banks of Newfoundland. The temperature of the air during the

* See next page.

summer months when fog prevails varies but a degree or two from 56°, corresponding with the temperature of water according to Fisher; yet in Spring the fog will appear when the thermometer ranges below that point. The effect upon the vegetation is very decided, and plants and trees along the coast are stunted in their growth. The spruce have a marked contrast by their close fibre to those of the interior and several species of sub-Arctic plants, which are to be found along the shores, disappear in the interior where the greater heat is incompatible with their existence. The same causes must produce some effect upon the animal economy, varying according to temperaments, in many cases, no doubt, beneficial, in others the reverse, to ascertain what it may be can only be done by vital statistics.

In the meantime we can get a good deal of information from the Army Reports of Great Britain and the United States. Dr. Forry states that the mean temperature on the Coast and inland seas varies from that of places distant from them. From New York to Maine the mean in winter being 6 degrees higher than at points remote from the ocean or inland seas. During spring the mean is lower by 4 degrees. in summer by 8.7 degrees and in autumn by 0.4 of a degree. The mean temperature of the winter and summer differs on the Coast being 38.6, at points in the interior 53.3, on the lakes being 43°, at places remote from them 55.8. From Forry's data, it appears that the development of phthisis on the Coast and the Lakes is 8.4 to 5.1 degrees at posts remote from them. The British Army reports give the relative development of phthisis: Great Britain 6.5, Canada 6.5, Bermuda 9, West Indies 13. The description of the seasons by Forry in the northern section from New York north-easterly to Bombay will answer for this in New Brunswick—he says they change more rapidly in the interior. On the shore the temperature was more equal, the changes gradual, the air more moist. We ought to have consequently a large amount of phthisical cases on our southern border.

The mortality per 1000 for nine years ending 1867 from disease was:

Home service.....	8.53
Canada	7.60
Nova Scotia and New Brunswick.....	6.10

Remarking upon this Parkes says: these numbers show what indeed is apparent in all the records, that Canada is a very healthy Station."

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Winter.	Sp'g.	Summer.	Ann'l Mean.	Rain, &c. inches.
Mean Monthly, St. John,	20.2	22.8	28.6	38.8	49.2	55.6	60.6	60.9	55.2	47.8	38.1	23.7	.....	.....	.....	41.8	50.6
do Fredericton.	19.5	15.7	24.8	36.9	50.4	60	66.6	63.8	57.1	45.6	32.8	15.1	.....	.....	.....	42.2	.....
do Toronto.	23.7	22.8	30	41	51.8	61.2	67	66	57.6	45	36.6	25.9	.....	.....	.....	44.8	31
Difference between St. John and Fredericton.....	0.6	6.6	3.7	1.4	1.2	4.6	6	2.4	1.9	2.2	5.8	9.9	.....	.....	.....	.....	.....
do St. John and Toronto,	3.5	.5	1.5	2.7	2.1	5.7	6.4	5	2.7	2.2	1.5	2.8	.....	.....	.....	.....	.....
No. days W. to N.E. winds,	23.2	18	19.2	14.7	8.7	6	2.7	9.2	9.3	13.7	18.3	24.2	67	44	13	41	.....
No. days E. to S.W. do.	7.7	10.2	11.7	15.3	22.2	24	28.2	21.7	20.7	17.2	11.7	6.2	24	49	74	49	.....
Prop. GUYOT. Amount of Vapor contained in a Cubic foot. Temperature.	40	46	46	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Vapor in grains.	2.8	3.4	4.0	4.8	5.0	5.2	5.7	6.7	7.9	9.3	10.9	10.9	.....	.....	.....	.....	.....
Quebec.....	41° to 44°																
Montreal.....	44.66 to 44																
Kingston.....	45.68 to 44																

Progress of Medical Science.

A LOST ART OF MEDICINE. An Address delivered before the American Medical Association by S. D. Gross, M.D.

We here reproduce in full, with the exception of some preliminary opening matter, the address of Prof. Gross before the American Medical Association. After contrasting the present disuse of venesection with the universal employment of it in his boyhood, and asserting that bleeding is emphatically one of the lost arts, the venerable Professor continued as follows:

How this extraordinary change in sentiment and practice was brought about, by what influence,

agency, authority, philosophy, logic, or mode of reasoning, is a matter worthy of brief inquiry. The causes, so far as they are patent to my mind, are mainly four: First, the influence or tyranny of authority, soon passing into more or less extensive fashion; secondly, the indiscriminate employment of the lancet in the days of what has been termed, not inappropriately, the Sangrado practice; thirdly, a more accurate knowledge of the nature and seat of diseases; and, lastly, the use of certain remedies unknown a third century ago, but now of general, if not universal, resort, in the treatment of inflammatory affections.

I. The influence of authority annually slays millions of human beings. Its pernicious effects upon human life, in its individual and collective relations are felt in every direction; in the construction of our dwellings, in our habits and occupations, in our dress, in our social entertainments, in our amusements, in our food and drink, and in a thousand other ways. Of its malign influence in our profession examples daily fall under our observation, as the result of pernicious doctrines and practices. Superstition and fanaticism have kept the world in a state of intellectual bondage from the earliest records of society down to the present moment. The spiritualism of the present day has its counterpart in the witchcraft of three centuries ago, fortunately without the hangman's halter. Every age has its peculiar absurdities, characteristic of the minds of some of its people. Mesmerism deluded thousands of persons. The metallic tractors of Perkins enjoyed for a time a world-wide notoriety. Homœopathy is still at work in deluding the world. Clairvoyance has many devout adherents. Berkeley, in the middle of the last century, effected many wonderful cures with the aid of his tar-water. For upwards of one hundred years the lancet enjoyed unlimited sway. Everbody was bled. Surgeons, during the last dozen years, have had carbolic acid on the brain as a dressing in wounds and other injuries. Broussais, Cookeism, and the blue pill of Abernethy, each had a reign of at least a quarter of a century. For an equally long period the medical mind of Italy was agitated by the tartar-emic treatment of Rasori and his followers. Thompsonianism, or the lobelia and cayenne-pepper treatment, is not yet entirely extinct on this continent, although its days were numbered long ago. For nearly a third of a century the doctrine of a change of type in disease has tyrannized over the minds of medical men, and exerted a controlling influence upon their practice. Of all these delusions, the latter, often called Toddism, after Dr. Todd, its author, has exercised the most pervasive and baneful effects upon civilized society. Ensnaring itself behind a false position, it has literally enslaved the medical world, entrapping alike the wise and the foolish, and sweeping over human life with a force equal to that of the fiercest and most destructive hurricane. Unlike the doctrine of sthenic and asthenic diseases of Dr. John Brown, who in the latter part of the last century enjoyed such a wide celebrity as a medical reformer, it assumes that all maladies are of a low type, im-

peratively demanding the use of stimulants for their successful management. It countenances no half-way measures. The patient must be upheld by stimulants or he must die. Now and then perhaps a few leeches may be tolerated, but only in very exceptional cases, where there is not too much depression of the vital powers. Who and what Dr. Todd, the author of this system of medicine, was, it would be needless to inquire. Everybody knows that he was one of the ablest writers and clinical teachers whom this century has produced; but that he was a profound thinker, I doubt; and it is well to bear in mind that the class of patients at King's College Hospital, London, of which he had charge, were persons in the lower walks of life, broken down by overwork, privation, and various forms of intemperance, and therefore unable to bear depletory remedies. Such patients as Dr. Todd had are to be found in the wards of every eleemosynary institution in Europe and in this country. It was from a study of this class of cases that this famous man in an evil hour, deduced the absurd doctrine of type in disease. I say absurd, for if there was ever anything absurd, this doctrine most assuredly deserves that name. Who, that has any knowledge of the human constitution as it is daily met with in our intercourse with our fellow-citizens, in the various pursuits of life, will lend credence to such an idea,—I had almost said to such a slander? I assert, without the fear of successful contradiction, that man's power of endurance in health and disease is not one particle less than it was fifty years ago, when depletory measures of every form were the order of the day; when, in fact, it would have been deemed derogatory to a physician's character to let a patient die without the aid of such remedies. The exploits performed during our late terrible war alone are sufficient to settle this question. Never, since man battled with man for national supremacy, were there so many rapid, laborious, and brilliant marches executed in so short a time as there were on both sides of the line. The exploits of the soldiers of Alexander, Hannibal, Cæsar, and Bonaparte fade into comparative insignificance by the side of those of some of our generals. Our laborers, farmers, miners, hewers of wood, carriers of water, mechanics, artisans, and professional men, evince no evidence of decline in muscular power or mental endurance. Our sailors are as hardy a race of men as they were in the days of Sir Francis Drake or Captain Cook.

If we look at the habits and modes of life of the people of the present day, it will be found, if I do not greatly err, that they do not differ, in any essential manner, from those of a third of a century ago. The different classes of men and women, in city and in country, live very much as they did in my boyhood, using the same kind of food and drink, pursuing similar occupations and amusements, and exercising as much control over their appetites and passions generally as their fathers and mothers. If there are any differences in any of these particulars, they are certainly not well marked, nor so radical in their character as to diminish, in any material degree, the power of endurance of our people in

health and disease. On the other hand, owing to the more extensive cultivation of our soil, the destruction of our forests, the draining of our marshes, and the greater attention paid to the study of hygiene, our people, especially those in the rural districts, are much more exempt from the diseases caused by the noxious exhalations from the earth's surface, so prevalent in newly-settled countries, and so pernicious in their effects upon the constitution, than they were in the early days of my white and bald-headed contemporaries.

Do not men during accidents and surgical operations, and women during parturition, often lose enormous quantities of blood, and yet frequently make excellent recoveries? In epistaxis, hæmoptysis, and hæmatemesis, this fluid is often largely poured out, and yet it is seldom that we hear of a person dying from the effects of its loss.

In the face of such facts as these, and a hundred others that might be adduced, if time permitted, the doctrine of a change of type in disease must fall to the ground as utterly untenable.

The influence of fashion is not limited to our profession. We all recollect how the crinoline of the French Empress, invented to conceal a condition of which most ladies are so proud, enslaved the female mind, until every woman, married and single, considered it as an indispensable article of dress. A sofa, however spacious, was hardly long enough for a woman thus arrayed to sit upon. How the fashion has changed within the last six or eight years is familiar to everybody. Now the dress is so narrow as to show the outline of the person, and compel the greatest care in progressing lest the fair wearer should trip and tear her garments. Even diseases occasionally become fashionably. When it became known that Louis XIV. was laboring under anal fistula, the disgusting malady became at once the fashionable ailment of his debauched court. The use of enemata was cultivated as one of the fine arts in France in the time of Molière, who lashed the faculty without mercy for its follies and extravagances.

Second.—The indiscriminate employment of the lancet in former days did much to bring blood-letting into discredit, not only with the better thinking class of physicians, but the public at large. "We cure the sick," says Guy Patin, a professor in the Royal College of France, "when over eighty years old, by blood-letting, and also infants of not more than two or three months, with as much success and as little inconvenience." Rush, the great champion of this operation on this side of the Atlantic, bled indiscriminately and remorselessly at all periods of life, the young, the middle-aged, and the old, in all kinds of diseases, in the eruptive fevers, in fever and ague, in puerperal fever, in inflammations, in injuries, in hemorrhages, and even in anæmia, often taking immense quantities of blood, and repeating the operation six, eight or even a dozen times in the same patient. In short, he and his followers used to bleed in every possible disorder until, in many cases, no more blood would flow, because there was none left. That such a

practice would at length work out its own destruction is what might reasonably have been expected. It rang its own knell.

Third.—That we are much better acquainted with the nature and treatment of disease than our fathers were is a fact so universally accepted as to require no argument in its support. Our progress in this respect, during the last forty years, has simply been marvellous; and to nothing are we so much indebted for these improvements as to the study of pathological anatomy and histology, and the astounding developments of chemical science.

Fourth.—That the treatment of disease has been greatly simplified within the period above specified is familiar to every member of the profession. Homœopathy, by the absurdity of its doctrines and primitive practices, long ago demonstrated to the world that most of its cures are effected spontaneously, through nature's restorative powers alone, while the patient's mind is medicated with the decillionth part of a drop or a grain of medicine; and in comparatively recent years two eminent medical philosophers, Professor Bigelow, of Boston, and Sir John Forbes, of London, showed us, by a series of admirably-conducted observations, that certain diseases, as small-pox, scarlatina, measles, typhus and typhoid fevers, are self-limited in character, and therefore not to be materially if at all abridged in their course by any plan or means of medication whatever. A third of a century ago the only so-called depressants, aside from the use of the lancet, were tartar emetic, calomel, digitalis, the latter of doubtful efficacy in any case, and the first often exhibited without due discrimination. Of aconite and veratrum viride, now so universally employed as antiphlogistic agents, we were totally ignorant. These two medicines, as I shall endeavor to prove by-and-by, although frequently of immense service in the treatment of inflammatory affections, are far, far inferior to blood-letting.

Believing that these are the principal, if not the only, reasons which have led to the abandonment of blood-letting as a therapeutic agent, I propose now to speak of the operation itself, and to point out first, the classes of diseases to which it is more especially applicable; secondly, the period at which it should be performed to yield the greatest amount of good; and, lastly, its mode of action.

Blood may be abstracted in different ways, as, first, by venesection, secondly, by leeches and cups; thirdly, by incision, scarification, or puncture; and fourthly, by arteriotomy. The latter operation is so difficult of performance that few practitioners are willing to attempt it. There are cases, as in violent inflammation of the brain, eye, and ear, in which it is supposed to exercise a peculiarly beneficial influence; but generally speaking, it is quite certain that venesection, if properly executed, answers every purpose, even in the affections here specified. Similar remarks are applicable to bleeding at the jugular vein, also usually a difficult and, sometimes even a dangerous, operation.

The diseases to which blood-letting is more particularly applicable are the different inflammations,

acute and chronic; general bleeding being best adapted to the former, and local to the latter. Hippocrates and his immediate followers bled largely in pneumonia and pleurisy, and Sydenham, Rush, Louis, Drake, and many others often took immense quantities of blood in the treatment of these maladies. In acute inflammation of the eye, in robust subjects, bleeding is often indispensably necessary to save the affected organ. Who would hesitate to draw blood largely, under similar circumstances, in acute inflammation of the brain and its envelope, in acute pericarditis or endocarditis, in hepatitis, splenitis, gastritis, enteritis, peritonitis, cystitis, metritis, or orchitis? Stricture of the urethra would be much less frequent if young men laboring under gonorrhœa were freely bled at the beginning of the attack. In traumatic affections of the joints, unattended with loss of blood or severe shock, the abstraction of blood would often prevent anchylosis, so common under the present system of treatment. The spasm which is so often present in recent fractures, especially in those of the leg and thigh, is more readily controlled by venesection, followed by a hypodermic injection of morphia, than by any other agent I have ever tried.

In chronic inflammation, blood-letting is often an indispensable remedy. Even the most ultra advocate of the stimulant method of treatment will hesitate to employ it when destructive action is gradually but surely undermining structure and function. The abstraction of five, eight, or even ten ounces of blood in chronic pneumonia and pleurisy, especially when associated with severe pain and obstructed respiration, often acts like a charm, relieving suffering and promoting the beneficial action of other measures. In chronic ophthalmia a few leeches applied to the fore part of the temple, on a line with the commissure of the lids, frequently produce the happiest result. But I will not consume your time by an enumeration of the different cases of chronic inflammation in which blood-letting might be advantageous. What I have said respecting the lungs, pleuræ, and eye is equally applicable to other structures, and needs no further elucidation here.

It requires no labored argument to show that general bleeding can be successfully practised only at the beginning of an acute disease, or during its earlier and gravescent stages. Performed at a later period, when the morbid action is fully established and the affected tissues are inundated with inflammatory deposits, it cannot fail to do harm by robbing the system of the strength so much needed to carry on its vital processes. A copious bleeding at the outset of a violent inflammatory disease is gold; but at its height, lead, or, to express myself more clearly, life in the one case, death in the other.

Secondly.—To draw blood to the greatest possible advantage, the quantity should be measured, not by ounces, but by the impression it makes upon the system, as denoted by the pallor of the countenance, the reduction of the heart's action, the softened state of the pulse and skin, the abatement of pain and of other symptoms, as headache, thirst, and

restlessness, so universally present in all severe inflammatory attacks. To insure this result in the most speedy and decided manner, the blood should be drawn from a large orifice in a large vein at the rate of two and a half to three ounces in the minute, while the patient is in the erect or semi-erect posture. If the body be recumbent during the operation, a much larger quantity of blood will be required to be drawn to produce the desired effect than when the reverse is the case. While, therefore, the bleeding should be spoliative, care should be taken not to waste the fluid unnecessarily.

To prevent undue reaction after the operation, the bleeding should not be carried to complete syncope, but merely to an approach to this condition, the effect of the operation being carefully watched by a reference to the countenance and the pulse, lest it should exceed the proper limits, and thus do harm instead of good. Violent reaction, however, in any case, after the abstraction of blood, may generally be effectually prevented by a full dose of some diaphoretic anodyne, as ten grains of Dover's powder with one-fourth of a grain of morphia, given immediately after the operation.

Respecting the repetition of the operation, every case must, so to speak, make its own rules. If, after a very copious bleeding, the symptoms rapidly reappear in all or nearly all their former intensity, the operation should at once be repeated, either by reopening the original orifice or by selecting another vein. In urgent cases, as in violent pneumonia, pleurisy, peritonitis, cerebritis, or endocarditis, the operation may often be repeated several times in rapid succession. Under such circumstances, the practitioner must, like a wary general, make forced marches, and follow up his successes, not waiting until the enemy has intrenched himself behind his works, but striking heavy blows while he has the opportunity.

But I shall be told that such heroic treatment must inevitably induce serious debility. I grant it will; but in turn I ask, will the disease, if neglected or permitted to progress, not also cause debility,—debility, perhaps, of the very worst kind,—debility from over-action of the heart, imperfect supply of nerve-fluid, deranged circulation, impaired function of vital organs, and, above all, from disordered structure from inflammatory deposits? The enlightened practitioner bleeds to save tissue, and to prevent the morbid action from running riot. He repairs strength, when the time for it arrives, by making blood with nutritious food and drink, and thus speedily sets the machinery of life again in motion. The timid, hesitating practitioner, the opponent of bleeding, on the contrary, although he may employ the same restoratives, uses them inopportunately, and thus allows the debility caused by his treatment to linger for an indefinite time, provided the patient is so fortunate as to survive the first onslaught of his disease.

Before I proceed to speak of local bleeding, let us briefly inquire into the mode of action of venesection, or, in other words, how the removal of blood from the system affords relief in inflammatory

affections. This question can be easily answered. In the first place, the abstraction acts spoliatively, diminishing, as the name implies, the quantity of blood, both in the part and system. Secondly, it weakens the power of the heart, and thereby prevents it from sending the blood with the same force and velocity into the suffering structures. Thirdly, it unlocks all the emunctories, and thus promotes secretion. Fourthly, it discharges the vessels at the seat of the disease, restores the circulation, and places the absorbent vessels in a better condition for the removal of effused matter. And, last, but not least, it favors the action of other remedies, as purgatives, diaphoretics, diuretics, and anodynes.

But it will be said that all these effects may and can readily be induced by the agency of other remedies, as aconite, veratrum viride, digitalis, mercury, and tartar emetic, and that, too, at much less cost to the system. That these articles are powerful depressants, lowering the heart's action and promoting secretion, no one at all acquainted with their virtues will question; but I deny that they exercise the same beneficial impression upon the vessels at the seat of the inflammation. When blood is drawn freely from a large vein at the bend of the arm, from a large orifice, to an approach to syncope, the vessels at the seat of the morbid action are unloaded, often to such an extent that the affected structures do not exhibit any marked difference in color from those in their immediate vicinity. Thus, for example, in violent conjunctivitis the mucous membrane, the seat of the disease, always, under such circumstances, presents a perfectly blanched appearance, however red and engorged it may have been the moment before. Now, what occurs in the eye, in such a case, may reasonably be supposed to take place in any other part of the body when a patient is bled to a similar extent. In pleurisy, one of the immediate effects of the copious abstraction of blood is a mitigation of the torturing pain which forms so prominent a symptom in this disease, due, evidently, to the diminished calibre of the vessels in the pleura, previously in a state of complete repletion. Has any one ever witnessed such an effect from the exhibition of aconite, digitalis, veratrum viride, or tartar emetic? Never. No matter how these articles may be administered, whether singly or variously combined, they are simply depressants, not depressants and evacuants, as the abstraction of blood from a vein or an artery; there is no blanching of tissue from their use, no unloading of distended and crippled vessels,—indeed no direct appreciable effect of any kind.

The more recent researches in pathological histology furnish a hint not easily to be mistaken as to the most salient treatment of inflammation in its earlier stages. The leading indication is to restore the paralyzed capillaries to their normal tonicity, so as to prevent structural changes in their walls, and facilitate the outward passage of the white globules with which they are choked. It is now well known that in every inflamed area there is marked hyperæmic distention of the blood vessels, which are often crowded to their utmost capacity with leucocytes,

which emigrate through the vascular walls, and, in conjunction with the effused blood-liquor, constitute the most important elements in inflammatory deposits. Hence the object of treatment should be to restore the capillaries to their normal calibre through the artificial induction of contraction of their walls,—an effect which can be brought about, as is daily witnessed in many of the external inflammations, by cold applications, which, as is well ascertained, produce reflex contraction of the vessels. In inflammation of the more deeply-seated organs and tissues, however, this object can only be attained by spoliative bleeding, whereby the affected capillaries are relieved of their contents. In this way only can their tonicity be restored, the further effusor or migration of cell-elements restrained, and the absorption of existing deposits favored.

Another effect of bleeding, not to be overlooked in this discussion, is the diminution which it causes in the quantity of fibrine and white globules, so remarkably augmented in inflammatory affections. This change, of which I have witnessed many examples, was beautifully illustrated in the case of a young man, nineteen years of age, whom I attended along with the late Dr. Charles Woodward, of Cincinnati, on account of a severe attack of pleurisy. Blood was drawn on three consecutive days, the first bleeding being performed about thirty-six hours from the commencement of the attack. The fluid, amounting to nearly a quart, was not only greatly buffed, but cupped on both sides of the crassamentum, as is shown in the specimen which is still in my possession. At the second operation the fluid was buffed, but not cupped; and at the third it was merely a little sized, all pain and active inflammation having by this time disappeared. If such effects follow the use of the articles above mentioned, I am uninformed of the fact.

In leeching and cupping, blood may be taken directly from the affected structures, or indirectly, as when they are practised at a distance from the seat of the inflammation; in the latter case the effect, if carried to a great extent, is similar to that produced in venesection, but generally much more tardy, and, therefore, in the main, not so efficacious. When the tissues are divided, as in incisions, scarification, or puncture, the vessels are directly drained of their contents, an operation often followed by great, if not permanent, relief. Illustrations of the efficacy of this mode of depletion are daily witnessed in tonsillitis, in erysipelas, ulcers of the extremities, inflammation of the uterus, and in impending mortification, not to mention other affections.

I have said that general bleeding can be successfully practised only at the beginning of an inflammatory attack, a fact which, I repeat it, is not to be lost sight of in weighing the propriety of such a procedure. Let it be borne in mind also that bleeding is not to be practised indiscriminately, but judiciously and with proper regard to the condition of the system. Our fathers grievously erred, because they bled in every stage of disease, and in all states of the system, the plethoric and the

anæmic, the strong and the weak. Of course there were exceptions, but as a rule this was the practice; the harm, hence, as a natural consequence of the abuse, the abandonment of the treatment. It is within the recollection of all the older members of this Association when the practice of medicine in this country and in Great Britain was limited to the lancet, calomel, digitalis, opiates, and tartar emetic, with gruel and chicken-broth as the chief diet during sickness. I well remember the time when the use of cold water was interdicted as highly improper, especially in the treatment of the so-called eruptive fevers, and when ventilation of a sick man's chamber was considered as fraught with danger. Bleeding will again come into fashion; history constantly repeats itself, and knowledge runs in a circle. No sensible man can fail to read the signs of the times; but it will not be indiscriminate bleeding, but bleeding performed for a reason, early, and, if need be, freely, to save tissue and promote resolution; in the robust and plethoric, in the young and middle-aged, not in the weak, the anæmic, the intemperate, the broken-down, and the decrepit. Practitioners during the last third of a century have labored under a delusion and a dream, from which they are gradually emerging to a sense of their duty; and, although I am not a prophet or the son of a prophet, I venture to predict that the day is near at hand, if indeed it has not already arrived, when this important element of treatment, so long and so shamefully neglected, will again become a recognized therapeutic agent, and will thus be instrumental in saving many lives, many an eye, many a lung, many a joint, and many a limb.

But bleeding should not be restricted to the treatment of inflammatory diseases. There are other affections in which it may often be practised with the greatest benefit. In puerperal convulsions, attended with a plethoric condition of the system, copious venesection, promptly followed by the administration of a full anodyne, either alone or in union with chloral and bromide of ammonium, and the application of leeches to the temples and cold to the head, is the sheet-anchor of our hopes, a positive *sine qua non* to success. An experienced and learned member of this association, Dr. J. Fordyce Barker, recently called attention to this subject in a paper characterized by strong sense and great practical acumen, worthy of his high position as an accomplished gynecologist. I believe, indeed, that the practice thus set down is one now generally, if not universally, adopted in the treatment of this dangerous disease, as it was in the time of Dewees and his more enlightened contemporaries. In certain forms of apoplexy the judicious employment of the lancet cannot be too strongly insisted upon, especially in comparatively young and vigorous subjects. Blood in this disease is often taken with leeches when it ought to be taken with the lancet. In asthma, bleeding is frequently of inestimable value, in relieving engorgement and spasm of the lungs, the causes of the terrible dyspnoea so often present in the more aggravated forms of the disease. I recall to mind the case of a lady who was the subject of asthma

from the age of fourteen up to that of eighty-six, when she died pneumonia, whom I repeatedly bled with the greatest advantage in attacks of this kind, which nothing else could relieve. In another case, that of a tall, slender gentleman of this city, nearly eighty years of age, in which a severe attack of asthma was complicated with great congestion and slight inflammation of the lungs, the abstraction of less than ten ounces of blood by the lancet led to a speedy convalescence and a complete cure. I verily believe that if this gentleman had not been bled he would have died. In certain forms of phthisis, venesection, judiciously employed, is frequently productive of great benefit. I allude more particularly to the chronic variety of the disease, kept for years in abeyance by great care and a properly regulated regimen. I remember the case of the late Mr. Benjamin Drake, of Cincinnati, a brother of the great professor, who labored for many years under disease of the lungs, associated with tubercular deposits, the more urgent symptoms of which were always promptly relieved by the loss of eight to sixteen ounces of blood by venesection. I have always felt satisfied that his life was materially prolonged by this treatment. Dr. Rush was in the habit, as Sydenham had been before him, of bleeding in every case of phthisis attended with a hard pulse, or a pulse rendered weak by the laborious transmission of blood through the lungs. In one of his cases he bled eighteen times in two weeks, and in another, fifteen times in six weeks, with the happiest effect. I do not cite these instances as examples for our imitation, but simply to show that a system borne down by disease may react favorably under what to us of the present day appears as a most heroic measure.

Forty years ago it was customary in protracted labor, dependent upon rigidity of the uterus and the perineum, to bleed in order to relax the parts and expedite the expulsion of the child. Dewees, in such cases, often took large quantities of blood, especially in young, robust, primiparous women, and occasionally even repeated the bleeding. I well remember that this was the general practice for a number of years after I entered the profession. Why it has fallen into disuse it would be difficult to tell. The abstraction of blood under such circumstances was always followed by the exhibition of a large anodyne, under the influence of which the labor usually progressed rapidly to a favorable issue, without subjecting the poor woman to undue torture, the danger of lacerating the perineum, or the necessity of applying the forceps, the use of which is now so common among all classes of accoucheurs.

The plethoric condition of the system so frequently met with in young, robust, pregnant women is generally promptly relieved by the abstraction of twelve to fifteen ounces of blood, and certainly there is no more rational remedy in such circumstances, especially when the redundancy of blood is accompanied by dizziness, vertigo, or headache. Thirty years ago there were few women that were not bled once or twice during utero-gestation on account of the symptoms, and I do not know that I ever heard of one that was injured by the practice.

Certain forms of hysteria and epileptic convulsions, dependent upon congestion of the nervous centres and a redundancy of blood in the system, are generally materially benefited by venesection. The relief in the former affection is often prompt and permanent, as I can testify from personal experience.

In the convulsions of infants blood-letting is frequently of signal service. In that form of the disease which follows upon the more severe attacks of cholera, so rife in our hot summer months, and which are manifestly due to over-excitement of the brain, as is shown by the excessive heat of the head, the flushed condition of the countenance, the suffused eye, the intense thirst, the incessant restlessness, the intolerance of light and noise, and the twitching of the muscles, the abstraction of two to two ounces and a half of blood from the arm, in a child from one to two years of age, not only, in many cases, promptly arrests the vomiting and other distressing symptoms, but protects the brain from more serious mischief, and thus places the system in a condition for speedy convalescence.

In what is called hay-fever, a good bleeding sometimes affords immediate alleviation of all the disagreeable suffering incident to that complaint, as dyspnoea, violent sneezing, nasal catarrh, tightness in the frontal sinuses, headache, and horripilations, or chilly sensations along the course of the spine. I recollect one case which came under my observation many years ago, in a clerical gentleman, thirty-three years of age, who, on being largely bled one Sunday soon after the close of his religious services, was completely cured for that season; and, although the malady recurred during several consecutive summers afterwards, the attacks were always comparatively light.

Cases have been related of great benefit afforded by bleeding in uræmic coma, attended with unconsciousness, dilated and fixed pupils, convulsions, a highly albuminous condition of the urine, and excessive prostration of the system. The blood at first issued feebly, but gradually the stream increased in volume, the blood assumed a brighter hue, the pulse rose, the convulsions ceased, consciousness returned, and the patient finally made an excellent recovery. Several such examples will be found recorded in the *London Medical Times and Gazette* for September, 1874, by Dr. Benjamin W. Richardson, in an article on "Blood-letting as a Point of Scientific Practice," and are worthy of special study.

This spring twelve months ago I was requested to visit a lady, a stout, muscular person, in robust health, upwards of forty years of age, who for several years past had suffered much from attacks of headache, attended with dizziness, and occasionally, also, with vertigo. She had tried various remedies without benefit. I suggested bleeding, to which she at once assented, and I drew fully three half-pints of blood, with immediate and permanent relief.

Surgeons the world over draw blood after severe reaction in concussion of the brain, to prevent inflammation of that organ and of its membranes

The more plethoric the patient, the greater the necessity for such interference; but the operation should by no means be restricted to this condition, as it is often of great value, if timeously performed, in the comparatively anæmic subjects. It was a case of concussion of the brain that gave rise to the never-to-be-forgotten conversation between John Hunter and his pupil, Dr. Physick, at the time resident physician at St. George's Hospital, London. A man laboring under concussion of the brain from a fall from a scaffold was brought into the surgical ward in a state of utter unconsciousness. "What shall I do?" said the pupil to his master. "Shall I bleed him?" "Bleed him? Bleed him, sir? No, sir! You would kill him outright. Wait, sir, until he reacts, and then bleed him,—bleed him to death, sir." [Dr. Charles D. Meigs, in *Pennsylvania Hospital Reports*, vol. i. p. 27, 1868.] In compression of the brain from fracture, with depression of bone and compression from extravasation of blood, the abstraction of blood by the lancet and leeches is frequently resorted to for the purpose of securing cerebral accommodation, and the practice, as is well known, is often followed by the most gratifying results.

We all have, at some period or other of our lives, experienced the torturing, racking pains in the back and limbs, so common in bilious, remittent, and intermittent fevers, as if the body was about to be broken in two, causing us to turn and toss about almost incessantly in search of ease; the head generally at the same time terribly distressed, the skin hot and dry, the thirst intense, and the heart in wild, tumultuous motion. Who that has ever been freely bled in such a condition of the system does not remember with grateful feelings the prompt alleviation afforded by the operation? The application of a dozen wet cups to the aching back has often speedily transported the poor patient, as it were, from torment to elysium. In gout and rheumatism the abstraction of blood is frequently of immense benefit, if not as a direct curative agent, as a means of relieving pain and paving the way for the more successful action of other remedies. The passage of renal and biliary calculi is often greatly expedited, and the suffering caused by it much alleviated by a copious bleeding, especially in stout, plethoric subjects.

But I must stop, for my remarks have already been extended far beyond my original design, which was simply to point out a few of the more prominent diseases in which, in my humble opinion, this much-neglected but most valuable therapeutic agent may be advantageously employed.

The fate of blood-letting, Mr. Chairman, teaches us an important lesson, not at all calculated to elevate our pride as men intrusted with the preservation of the health and lives of our fellow-beings. It shows what little faith there is to be placed in human judgment, and how sadly we are influenced by authority and fashion in a matter pertaining to the dearest interests of society. If I wished to be satirical, I should say that there are in our profession, as there are, indeed, in every other, two distinct classes of men,—the thinking and the non-thinking. The

former, whose number is exceedingly limited, accept every novelty, or great and sudden change, with suspicion, wisely concluding that the one ought not to be adopted until it has been fairly tested by well-conducted observation and experiment, and that the other should not be rejected without sufficient cause. The non-thinking man, on the contrary, eagerly lays hold of every novelty, and seldom stops to seek a reason for his new faith. He adopts it simply because his neighbor adopts it. Especially is this the case when the novelty, whatever it may be, has a distinguished parentage, as when it has received the sanction of a great name, or perchance, if it had a transatlantic origin. Jones, Robinson, or Brown, in Europe, is always a great man, far greater than his namesake on the other side of the water. This non-thinking man confounds progress with improvement. He does not weigh the pros and cons of a question; he takes a shorter route; sees things in a distorted light, assumes for granted what he cannot comprehend, and jumps at conclusions. As the sheep follows the wether, so he follows his master, looks through his spectacles, believes in his infallibility, and swears by his authority. The more the assertion borders on the marvellous, the more greedily does he gulp it, so much easier is it to assume the truth of a proposition or statement than to prove it by sound logical argument and inductive reasoning. I think I am not guilty of exaggeration in what I say. It really seems to me as if we were bereft of our senses. No sooner is a new remedy, an operation, or a method of treatment introduced to notice, than it is puffed into gigantic proportions and endowed with virtues as foreign to it as any other folly under heaven. Certain it is, there never was any greater need for deliberation and reflection than there is at the present time; greater need of asking ourselves, "Watchman, what of the night?"

AMERICAN MEDICAL ASSOCIATION.

OBSTETRICAL SECTION.

Address of the Chairman, Dr. W. H. Byford, Chicago, Illinois, on the Treatment of Fibrous Tumors of the Uterus by Ergot.

Until recently, all forms of fibrous tumors of the uterus were regarded as beyond the reach of medicine or surgery. Enucleation was regarded as the only operation to be thought of, and that was very difficult, except in desperate cases. All will agree that it should be a last resort. Of the medicinal treatment of these tumors, we may say that it is not a last resort, but a safe means to be used before danger presents. Even in extreme cases, we may hope for success. We have learned that ergot, etc., exerts a special influence on the unstriped muscular fibres. This property is possessed not only by ergot and belladonna, but also by quinia, some preparations of lead, alum, bromine, and iodine in a high degree, and by most of the astringents.

From our knowledge of the unstriped fibres in the composition of the uterus, we can better understand how these agents can act upon the uterus.

While these fibres from the muscular structure of the walls of the womb, they also form part of the arteries supplying its blood.

Ergot and belladonna act upon the walls of the uterus in a triple way, causing a diminution of the blood flow. The calibre of the arteries is diminished by the contraction of their muscular fibres; the arterioles are diminished in size by compression, by contraction of the uterine muscular fibres and womb; these vessels are distorted by both the contraction and compression, and hence, is checked the blood flow. Under the influence of these remedies, the nutrition of fibrous tumors is diminished, and hence they are more susceptible to disintegration and absorption.

We must not, however, expect too much of any remedy. The great success of Hildebrandt has exceeded that of his followers, and they have hence been tempted to reject the whole as a mistake. Probably partial benefit only will result in a majority of cases. Tumors which have become of a cartilaginous hardness, or masses of earthy matter, cannot be absorbed. Nor can they be disintegrated by lack of nutrition. Again, the power of contraction in some tumors is almost gone.

Tumors, however, of a single nucleus are generally very vascular, and the muscular fibres are hypertrophied, as in pregnancy. These grow rapidly, and at the same time are most easily affected by ergot.

Between such extremes there will be a great variety of results in treatment. As circulation diminishes, etc., the vitality of the tumor is lessened, until fatty degeneration results, and absorption is easily accomplished. Again, the ergotism aids to expel the tumor, whether it be a polyp or an intramural tumor. When the tumor is nearest the mucous surface this result is most liable to occur. He detailed two cases of his own; the fluid extract of ergot was used in one, in half drachm doses, for nearly three weeks, producing great suffering from uterine contraction. The tumor expelled, with inversion of the uterus, enucleation was performed, and the uterus replaced. In the other the ergot was used both by the mouth and hypodermically. The most complete success followed in both cases.

He had abstracts of one hundred cases of this mode of treatment, with the most favorable results, obtained from journals and letters of professional friends. In some cases, the pain has been intolerable and the remedy was discontinued. Again, ergotic intoxication supervenes and prevents a continuance. The debilitating hemorrhages, and leucorrhoeal discharges are often promptly relieved. In many the tumor is greatly diminished. Again, if the tumor is not sensibly affected, disagreeable symptoms are generally relieved. Occasionally, no result is seen to follow treatment by this remedy. Metrorrhagia has been mitigated, though the tumor was apparently not affected.

He gave in great detail the cases by a number of operators, from which he drew the above points and a most favorable verdict by all. He sums up 101 cases; 22 were cured; in 39 the tumors were dim-

inished and the hemorrhage and other disagreeable symptoms removed; 19 were benefited by check of hemorrhage, etc., the size of the tumor and other conditions remaining unchanged. Only 21 entirely resisted the treatment, leaving 80 decidedly benefited.

Method of use of ergot.—Uniformity is not observed as to its employment; some use it hypodermically, others, also, by the mouth and by the vagina and rectum.

Hypodermically, it is thought to act more rapidly and certainly, and without gastric trouble. It is objected that this plan causes pain by the needle, inflammation and suppuration. Pain of inserting is rarely an objection. Hildebrandt, in 1000 injections, never saw an abscess follow his own operations, and only three times in the charge of his assistants. He always injected very deep into the subcutaneous cellular tissue, perhaps even into the abdominal muscles.

Atthill does the same, but had this trouble in all three of his cases.

Chrotak was compelled to abandon this method on this account, in four out of nineteen cases. Others also experienced the same difficulty.

Hildebrandt appears to stand alone in his success as to this point.

The lower part of the abdomen is selected for the injections generally.

Keating injects back of the great trochanter.

Jackson uses the deltoid at the point.

White injects over the abdomen into the cervix, uteri, and into the tumor, if accessible, and with no bad results.

Wey encountered abscesses once in every eight injections. He used the abdominal region.

Hildebrandt uses Wernich's formula for the watery extract of ergot. It is thought to be very similar to that of Squibb. Hildebrandt adds pure glycerine, one part to four of the solution, and injects forty minims, containing a little over two grains of the extract, say ten to twelve grains of crude ergot.

Americans generally prefer Squibb's. He recommends the following: dissolve 200 grains of the extract of ergot in 250 minims of water, by stirring, filter, and make up to 300 minims by washing the residue on the filter with water. Each minim represents six grains of powdered ergot. Ten to twenty minims should be injected daily, or every two days.

Wey lays stress on a fresh solution, as it rapidly deteriorates and becomes irritating; generally in half an hour painful contractions result, an increased hardness of the tumor is felt. These contractions increase for two hours, continue with vigor from six to ten hours, and gradually cease. Some refuse to proceed, on account of the suffering. Often hemorrhage is insensibly controlled, and the tumor slowly decreases, without the patient experiencing any discomfort. Generally, the benefits are most rapidly produced in the early part of the treatment.

Most frequently, the internal treatment is by the fluid extract alone, or with belladonna. Some say thirty drops three or four times a day. Others use a drachm once or twice in twenty-four hours.

Perhaps it is most efficacious in large doses and less frequent. This preparation is very offensive, and occasionally cannot be borne. Squibb claims that his solid extract does not so offend. It may be used in pill coated with gelatine; five grains equal twenty grains of crude ergot, and may be given two or three times a day.

Dr. Byford preferred this form.

White uses a suppository of fifteen grains of solid extract.

The addition of belladonna increases, in some cases, the effect.

Goodrich who obtained excellent results, used the two.

Ergot also benefits in other ways. Often it relieves obstinate constipation, improves the appetite, and health is regained. It may, however, cause inflammation of the uterus. Some have seen it produce vertigo, imperfect control of the extremities and slight spasms of the flexors of the forearm; others observed nervous perturbation. Allen reports phlebitis as resulting, in one limb resembling phlegmasia albadolens. It is believed not improper to continue its use during the menstrual flow.

Auxiliary treatment is rejected by some, but is generally regarded as useful. Absorption may be promoted by the alkaline bromides and iodides.

Corrective treatment aids to prevent or ameliorate the disagreeable effects of the ergot. The chloral renders it more tolerable. Indigestion, constipation, etc., may be corrected by tonics, laxatives, and stimulants, given simultaneously with the ergot. Finally, he concludes, the ergot may cause disintegration and absorption, may interrupt the nutrition of the tumor; decomposition occurs within the capsule, and a semi-putrid mass is expelled. This is accompanied by inflammatory symptoms, and more or less toxæmia. The tumor, in its capsule, may be expelled from the cavity of the uterus, with greater or less inversion of the womb. It is then readily removed. There may be great suffering, and even peril, from the gangrenous disintegration and the pain of expulsion. Ergot does not always act at once, but appears cumulative, causing rather suddenly extreme and prolonged contractions. Opium and chloral may then become necessary.

From a review of the cases, it is seen that the gradual disappearance of the tumour takes place under small doses.

We are warranted in saying that moderate doses of ergot, as one-half drachm doses of the fluid extract two or three times a day, hypodermically, persistently used, is generally sufficient to cause a gradual disappearance of the tumor, and this quantity should not be exceeded in the treatment of large multinuclear tumors.

When we desire to cause the expulsion or gangrenous disintegration of a tumor, we must use large quantities, and continuously, until this effect results. Much careful observation is yet necessary to determine fully the safe and effective use of ergot.

NOTES ON SCARLATINA.

By ARTHUR WYNNÉ FOOT, M.D.; Junior Physician to the Meath Hospital.

It appeared to me that it might be of interest, at the present time, to offer a few brief remarks on some points connected with scarlatina. The epidemic which has just begun to abate has furnished numerous cases for observation, and has enlarged the experience of many, while it has almost originated that of some. Among the latter class I place myself, and, therefore, I noted with care, as many cases as I had time to observe accurately, and added them to my small stock. The object in view was not statistical in any way, but the acquisition and preservation of a personal experience of the disease. I find in my note-books 73 cases detailed in full, and of 17 others the clinical charts of temperature, &c.; these data furnish the basis of my comments on the subject. These 90 cases, the greater number of which have reference to the present epidemic, do not, of course, include all the cases which have come under my observation, but are merely those to which I can refer with certainty as accurately noted at the time. The number may appear very small to some, but as my experience has been principally derived from the wards of the Meath Hospital, it is proper to observe that the accommodation there, in the isolated building for infectious diseases, is scanty; that many of the cases, owing to tedious sequelæ, occupied beds for a long time—50, 60, and 70 days, or more—and that many were kept in hospital after apparent convalescence, as a prophylactic measure against ulterior complications.

My impression of the late epidemic is, that although the mortality in the city, in general, was large, this was rather owing to its prolongation and general diffusion than to the severity of type it exhibited; and that fatal results occurred rather from the state of health of those attacked than from malignancy in the virus. This impression is founded on three classes of observations—first, the number of deaths was relatively, for scarlatina, small in the number of cases which came under my observation; in the hospital it was 9 in 73, or 12.3 per cent.; secondly, the throat affections, and their consequences, did not seem as severe or as numerous as usual; and, thirdly, the elevation of temperature was not excessive. In reference to the first point, it is to be borne in mind that the rate of hospital mortality of scarlatina is relatively raised by the advanced stage in which, from reluctance to part with them, parents bring their children for admission, often carrying them there only when dying, and when treatment is useless and hopeless; and, again, the very mild cases are usually not brought to hospital at all. Then as to the throat affections, there seemed to be a marked absence of the formidable consequences described in previous epidemics—for instance, in Dr. H. Kennedy's account of the epidemic of scarlatina which prevailed in Dublin from 1834 to 1842 inclusive, such as hæmorrhage from the carotid artery or jugular vein, and diffuse cellulitis of the neck. The elevation of temperature was not excessive; 1,857 observations on the tempera-

ture in scarlatina have been made by the clinical clerks, the practising pupils, and myself. Seven cases on one or more occasions exhibited a temperature of 105° F., or upwards; four of these seven died. The highest temperature I have observed in scarlatina was 106.8° F. It occurred on the evening of the third day, in a boy aged sixteen, from Rehoboth Reformatory, with the pulse 160, respiration 34. Although quite conscious and intelligent, his lips, hands, and nails were dark blue, his feet and legs of a greyish-lead colour, the chest and back exhibited the eruption of a very dark colour; the throat affection was of the catarrhal variety. Although there appeared to be ample room to swallow, he had spasmodic dysphagia. He died the following morning. From the earliness of the rise of temperature in scarlatina, the thermometer becomes of the greatest use in prognosis; Wunderlich observes that in all cases of scarlatina which are tolerably severe, the first symptom which shows itself, or, at all events, one of the first, is a rapid and continuous elevation of temperature, by which, in the course of a few hours, this reaches a considerable height, 103.1° to 104° F. The height finally reached by the temperature is almost always above 104° F., very commonly over 104.9°, but seldom in cases which terminate favorably exceeds 105.8° F. Cases of scarlatina also occur in which, very suddenly, and without obvious motive, the temperature rises to enormous heights before death; in one of Wunderlich's cases it rose to 110.3° F. Currie found a temperature of 112° F. in a case of scarlatina; and Dr. Bathurst Woodman has put on record some fatal cases of scarlatina, in which the temperature amounted to 115° F. In these latter cases the observations were made with one of Negretti and Zambra's thermometers, divided into fifths, which had never been recently compared with a standard. By sponging with vinegar and tepid water, and then changing to a fresh bed with cool sheets, I have, in a few minutes, reduced a morning temperature of 105° F. to 102.4°. Though Wunderlich remarks that the temperature seldom exceeds 105.8° F. in cases that terminate favorably, I have had a case in which the temperature on the third night was 106°, and which made a good recovery, although the boy, eighteen years of age, was not quite convalescent from typhus when he got the scarlatina. In contrast with this case of recovery from scarlatina after typhus, is one of typhus after scarlatina, which proved rapidly fatal, probably on account of renal disturbance bequeathed by the scarlatinal attack. A fair-haired, fresh complexioned lad of sixteen was discharged from an hospital after a five weeks' illness from scarlatina; five days afterwards he got ill, and on the sixth day of this illness he was brought to the Meath Hospital, covered with a close, minute, dirty-pink eruption; sheets of skin were coming off his feet; he bled from the nose, kidneys, and bowels; an icteroid hue came over the skin of the face and the conjunctivæ, accompanied with hiccup, green vomiting, and coma; and he died, in convulsions, on the 11th day of this illness. The kidneys were in a state of parenchy-

matous nephritis, enlarged—the left to 10, the right to 8½ ozs.,—softened, of a brownish-purple colour, and greatly congested; the gorged, pulsatous spleen, weighing 21½ ozs., flattened itself out on the table like a flabby fish. There seems every reason to believe that in this case the fatal issue of the typhus was determined by the recent attack of scarlatina, and it makes a striking contrast with the case of the other lad who got the typhus before the scarlatina.

When the case just mentioned presented itself, and before he was put to bed and examined, as he was stated to have just left an hospital after having had scarlatina, the idea of its being a case of relapse occurred to me, but I have not yet met with a case of genuine relapse in scarlatina. Such, however, occur, and it does not appear to be a very unfavourable event. Trajanowski records eight cases in which relapse took place, and none of them proved fatal. In one, selected as an example, on the twenty-fourth day, seventeen days after the cessation of fever, the scarlatina eruption again covered the whole body, sore throat returned and hæmaturia (desquamation and albumen had been disappearing); on the eleventh day of the second attack febrile symptoms disappeared, and a second desquamation followed in the usual way. I have met with two cases only of second attacks of scarlatina. One was a young gentleman, aged fourteen, who, I was told, had had scarlatina four years previously, and had been attended for it by a surgeon of eminence, since dead. He was exposed to infection at school, and took it a second time, and had the disease in a very fully developed form. On the sixth day the whole body, with the exception of the face and neck, became covered with a miliary eruption, which was opalescent and whey-coloured in the morning, and by evening was bright yellow. This eruption, which retreated in little more than twenty-four hours, was succeeded by great hyperæsthesia, especially of the upper extremities; he cried out when his hands were touched, or the bedclothes gently tucked in over his arms to keep them from exposure. The pustular eruption seemed to dry up rapidly under the use of 20 gr. doses of sulphocarbolate of sodium every eighth hour. On the twenty-fifth day he got cold from going to a water-closet contrary to orders, and pericarditis set in, with a well-marked metallic friction, which lasted for four days; when this disappeared green vomiting and bleeding from the nose and gums came on; nothing but soda water would stay on his stomach. On the thirty-eighth day the pulse was 150, and temperature exceedingly high, and he was ordered 5 gr. doses of quinine every third hour. After 10 grs. of quinine he was quite deaf, the pulse was 129, and the temperature reduced; after he had taken 25 grains of quinine he was much better, took some food, and asked to be allowed to sit up; and, although remaining quite deaf for a week, convalesced from this time steadily. The other case of a second attack in a medical student, twenty years of age, who had charge of scarlatina cases in hospital. He died on fourth day with suppression of urine, coma, and convulsions. His mother told me that, when a child, he had had scar-

latina so badly that the medical man who attended him had despaired of his recovery. A significant point about this case was that he had recently had syphilis; he had taken mercury in abundance, and had had severe attacks of erethismus mercurialis. This latter class bears upon the subject of the relation, hinted at by Dr. Woakes, between syphilis and malignant scarlatina. Dr. Woakes has advanced the suggestion that cases of malignant scarlet fever, occurring when the type of the prevailing epidemic is mild in character, may be accounted for by the existence of inherited syphilis. In support of this view he adduces five instances, the only fatal ones occurring to him during an epidemic of scarlatina of nine months' duration, in each of which the hereditary taint was distinctly traced; he also hints that this circumstance, inherited syphilis, may explain the well-recognised fact that, in certain families, scarlatina is almost invariably a fatal disease. In reference to this point, of a relation between syphilis and malignant scarlatina, I think that, if, as Dr. Woakes' cases seem to show, inherited syphilis, by deteriorating the constitution, enhances the severity of scarlatina, primary and recent syphilis would be still more likely to do so; but there are certainly families specially obnoxious to scarlatina, in whom the fatal peculiarity cannot be ascribed to a syphilitic taint.

Cases of Rötheln have not come numerously under my notice, probably because being, as Trousseau observes, the most benign of all the eruptive fevers, and terminating spontaneously without requiring medical interference, such cases were not brought to hospital. However, two well-marked cases were admitted, one of which, a young woman, aged twenty-four, exhibited the compound eruption in a marked degree; the eruption on the trunk, back and front, resembled that of measles, that on the arms resembled that of scarlatina, while there was none upon the legs. The subfebrile temperature, especially in their early stages, accorded remarkably with those of the cases published by Dr. J. W. Moore, in whose communication on the subject will be found a very complete *resumé* of what is known about this affection.

Many cases of scarlatina, and principally the worst, were thickly covered on all parts but the face with what might be called puriform sudamina, but which Hebra refers to the opaque form of miliaria crystallina constituting the *scarlatina miliaris*. This eruption was usually accompanied with very troublesome itching, which was relieved by sponging with vinegar and water, and in males its existence on the scrotum—about which part and in the cleft of the nates it was abundantly developed—gave rise to much annoyance from friction against the thighs; this was alleviated by enveloping the scrotum in wadding. In two fatal cases with lurid purpuric eruption—one of which a boy, aged fourteen, died on the sixth day, the other a young man, aged twenty-two, on the fifth day—the contrast on the indigo-coloured corpses of the bright-yellow or milk-white eruption was very striking, and verified Hebra's observation—that if there is any one erup-

tion which remains visible and unchanged after death it is this, the miliaria. This eruption appeared of an unusually large size in a girl of sixteen, who recovered; on the twelfth day large, white, raised vesicles, the colour of grease, uncommonly like the milky, flattened eruption of variola, which goes by the name of the "white pock," appeared in numbers on the front and sides of the chest and abdomen; there were many the size of a fourpenny-piece; they appeared to be the form of eruption which has given rise to the term *scarlatina pemphigoidea*. Besides the ordinary scarlatina eruption and the miliary and pemphigoid eruption, urticaria was noticed, and in one case a rose-coloured papular eruption appeared subsequent to a crop of pustular sudamina which had followed the normal efflorescence. The miliary eruption in cases which recovered had a desquamation of its own, which preceded that of the general skin. In a case of scarlatina sine eruptione, the student in attendance caught scarlatina of a severe type, and there was reason to believe he was infected by that particular case; and I think this one of many proofs that the *contagium* of scarlatina is by no means peculiar to the exfoliating cuticle. That, however, it is highly communicable by means of the epidermis is well known, and it seems to be transmissible by post in this manner; and, as an illustration, an abstract of a case of "scarlatina communicated by a letter" may be cited from Dr. J. W. Moore's "Report on Scandinavian Medicine." The author (Dr. Petersen) made the observation—in the case of a girl, aged seventeen, who contracted scarlatina without the possibility of tracing the infection directly to any person—that a friend of the patient living several miles away had had the disease a month previously, and that this friend had regularly corresponded with the patient during the period of her desquamation. The author regards it as not impossible that scarlatina may be conveyed in this way—separate, perhaps microscopical, scales being thrust off the hands on to the paper during the writing of a letter, and the infection being thus carried to the address. The popular habit of immediately burning letters received from a house in which there is infectious disease as soon as read is not to be discontenanced. In the case of a girl, aged fourteen, who had been affected with xeroderma and ichthyosis-spuria, and who contracted scarlatina immediately after these conditions of the skin had been removed, the process of desquamation was watched with interest, but it did not present any special modification over the parts which had recently been diseased. It is probable that the regeneration of the skin subsequent to the attack of scarlatina was beneficial; it is stated that ichthyosis-vera has been cured by an attack of small-pox.

The vomiting and purging in the early stage of bad cases seemed, as Dr. Graves has remarked, to depend on cerebral irritation and congestion, rather than upon an effort of the stomach to get rid of any offending materies morbi. A permanently contracted pupil, particularly noticed by Fothergill as a sign of bad omen, was observed in a malignant case in

which hiccup occurred almost incessantly, from twelve to nineteen times in a minute. Head symptoms, such as convulsions, when apparently connected with a diseased condition of the kidneys, as evidenced by scanty and bloody urine, were treated by leeching and cupping over the kidneys, poultices, plain or of digitalis leaves, and compound powder of jalap, the head being sometimes shaved and cold lotion applied. The tendency to the head in scarlatina, affecting one subject to epileptic fits or debilitated in the nervous system, was exemplified in the case of a little girl of eight, who, from an affection of the brain at four years of age, had paralysis and atrophy of one upper extremity. She was one of four children who all had scarlatina very lightly. Immediately after their recovery they were advised sea-bathing; two of them got dropsy; the girl severe convulsions on the paralysed side, followed by coma, from which she was aroused to a state of the greatest mental activity by the application of liquor ammoniæ on a towel to the shaved scalp, but only to die, in twelve hours, of rapid effusion into the bronchial tubes. Her urine was solid with albumen, and dry cups applied over the kidneys produced highly raised blobs of serum.

Of the scarlatina bubo—for it is an anatomical misnomer to call it a parotid swelling, since it originates below the angle of the jaw, and is due to irritation of the lymphatic glands of the tonsil, soft palate, and pharynx—three varieties were observed: those which opened spontaneously—sometimes inwardly, sometimes outwardly, or sometimes in both directions—those which required an incision, in one case two and a half inches deep, and those in which there was no indication of the formation of matter, but merely an œdematous infiltration of the parts; more than one of the latter cases died unrelieved. The buboes appeared to be a local result of the constitutional irritability of the lymphatics, and to depend upon the amount of pharyngeal ulceration, presenting themselves on the right or the left side, sometimes on both, according to the situation of the ulceration in the throat. A boy, aged nine, was brought to hospital to be treated for torticollis, which had resulted immediately after an incision, made elsewhere, into one of these scarlatinal cervical abscesses; the incision appeared to have divided the spinal accessory nerve just before it enters the upper third of the sterno-mastoid muscle, and to have paralysed both it and the trapezius of the same side. Leeching sometimes relieved the delirium in these cervical swellings, a delirium caused by the pressure of the enlarged glands upon the internal jugular vein; poultices, from their weight and pressure, were borne with impatience, and constantly pulled off; the application of wadding was more light and comfortable, but, unless in the cases which subsided spontaneously, nothing gave relief but the exit of the matter. Severe rheumatic pains in the joints were frequently observed; but, although rigors and sudden rises in temperature were observed, in no case was there any permanent disturbance of an articulation; the articular pains required opium in doses measured much more by its effect upon the

pain than by the age of the patient. Pericarditis was in three or four cases detected, but proved fatal in no instance.

The oldest patient I have had in scarlatina was a policeman, aged forty-two; he was a mild case, and made an uncomplicated recovery. In a man, aged thirty-three, the scarlatina was followed by a most tedious and severe attack of enteric fever, which kept him in hospital for two months and twenty days, exclusive of the scarlatinal illness. He had left hospital, convalescent from scarlatina, eight days, when he got the initial rigor of enteric fever. In his paper on the "Relation of Scarlatina to Enteric Fever," Dr. Harley gives five cases in which scarlatina was followed by enteric fever, as if it were a relapse, and three cases of simultaneous enteric and scarlet fevers. His previous observations on the pathology of scarlatina tend to show the similarity between the morbid anatomy of the two diseases, and to such cases he would apply the term "Abdominal scarlatina." The ordinary cases of scarlatina were simply treated with dilute acids and an astringent gargle, or one of plain warm water, the throat been protected externally with wadding; catarrhal irritation of the pharynx, with a thirty-grain solution of nitrate of silver, brushed occasionally over the surface. For parenchymatous inflammation of the tonsils with ulceration of the surface, glycerine of tannin or diluted carbolic glycerine were applied. In one case in which there was genuine diphtheritic exudation, nothing dissolved the tenacious exudation and facilitated its removal from the subjacent bleeding surface like solution of lactic acid. For nasal catarrh the nares were syringed with diluted carbolic glycerine. The initial fever, when violent, was moderated with aconite. The head symptoms, such as pain, sleeplessness, delirium, and convulsions, were treated differently, according as they appeared due to the violence of the fever of invasion, to the cervical swellings, the state of the kidneys, or the malignancy of the attack. Two prime conditions of treatment appear to be a judicious dietary, excluding nitrogen as much as possible in anticipation of the detriment liable to accrue to the renal organs, and the proper use of stimulants; these latter were frequently well borne in this epidemic. The treatment was essentially eclectic, and in no respect was routine observed. In such a treacherous disease the channels buoyed and marked carefully on his charts by one pilot may prove dangerous to another who may select the same route, owing to differences in the build, and trim, and draught of the vessel to be navigated; and no disease requires more ample therapeutic resource, more constant alertness, and more careful independent judgment in its management, than does scarlatina.—*Dublin Medical Press.*

ON CROTON-CHLORAL HYDRATE.

In the *Medical Press and Circular* Dr. J. C. O. Will says:—

I may state my decided conviction that of all

hypnotics, croton-chloral has the least troublesome sequelæ.

I make it into a syrup containing two grains of croton-chloral to a drachm of a mixture of glycerine and syrup of orange flowers, colored by adding a very minute quantity of tincture of cochineal. This effectually conceals the taste of the drug, which is certainly to be desired, as it seems to me decidedly unpleasant, and when taken without some flavoring agent it leaves a disagreeable, semi-acid taste in the mouth for a considerable period after swallowing it. This preparation is permanent, a matter of considerable moment, as croton-chloral, though rather freely soluble in warm fluids, is only sparingly so in cold, and when first employing it I was disappointed to find that a mixture which was perfectly clear when first made, soon after became clouded, and threw down a copious deposit of crystals on becoming quite cold. It is, as stated by Wallich and Diehl, freely soluble in alcohol, and a strong tincture can thus be prepared; but, fortunately, on the addition of water, separation soon takes place, the liquid first presenting an oily-like appearance, and soon after depositing crystals. Therefore, if a strong spirituous solution is prescribed, directions must be given that water, in the proportion of at least a drachm to each two grains of the croton-chloral, should be added before the dose is taken, else the changes I have indicated will ensue, and some of the crystals are pretty sure to adhere to the spoon or glass, or to remain in the patient's mouth, an occurrence certainly not desirable, as the taste of pure croton-chloral is far from agreeable.

CASE 1.—Mrs. T., æt. 30, suffering from severe facial neuralgia, occurring every night about ten o'clock, was ordered three grains of croton-chloral; half an hour after the pain disappeared, and she slept well, which she had not done for some nights before. On the four following nights the pain recurred at the same hour; three grains were again taken, with similar effect. On the sixth night pain not nearly so severe. On the seventh still less so, after which it did not return. On asking the patient if the mixture made her sleepy, she replied, "No, the pain left me, and then I soon went to sleep." At the time when this statement was made to me I had not seen Liebreich's paper on croton-chloral, but I have since found that it is in accordance with his experience, viz., "that in some cases of tic douloureux the remarkable phenomenon is exhibited that pain ceases before sleep sets in."

CASE 2.—Mrs. S., æt. 43, a somewhat hysterical female, suffering from supra-orbital neuralgia, appearing every night about eleven o'clock. To take $2\frac{1}{2}$ grains on appearance of pain, to be repeated in two hours if necessary. Soon after the first dose pain abated considerably; after the second it disappeared entirely, and did not return for some nights; when it did, the medicine again acted as on the former occasion.

CASE 3.—Mrs. W., æt. 31, had been for some days attacked by intense pain in her right temple, commencing soon after she arose from bed, and continuing with more or less severity during the greater

part of each day. When I was called to her it was more severe than it had ever been before. She was directed to take three grains every second hour till relieved. Six grains sufficed, and when I visited her on the forenoon of the following day she was quite free from pain, and said that soon after the second dose she felt so well that she had been able to serve her customers "just as if nothing had ever been the matter." In this case the truth of Liebreich's statement, already alluded to, was well affirmed.

— THERAPEUTICAL NOTES.

GONORRHEEA.

Dr. Haberkorn, of Berlin, reports excellent results in both acute and chronic gonorrhœa, with the following injection:—

℞. Quinæ sulphatis,	grs. vj
Glycerinæ,	3 ij
Aquæ,	3 vj
Acid, sulph dilut.,	gtts. v. M.

Sig. Use about a teaspoonful or two as an injection three times a day.

— REMEDY FOR CHRONIC HOARSENESS.

In chronic hoarseness arising from thickening of the vocal cords and adjacent membrane, the ammoniated tinctures of guaiacum is often a very efficacious remedy. It may be mixed with equal parts of the syrup of senega and a teaspoonful of the mixture given two or three times daily.—*Am. Practitioner.*

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TO OUR SUBSCRIBERS.

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— PERSONAL.

The many friends of Dr. R. A. Kennedy, Professor of Surgery in Bishop's College, will learn with regret that he has been compelled to relinquish all active work, owing to bad health. We believe he will almost immediately proceed to Colorado, where he proposes passing at least the early portion

of the winter. He will not return to Montreal before next spring. We are sure he carries with him the warmest wishes of the entire profession in Montreal for his speedy restoration to health.

Dr. George F. Slack—lecturer on Minor Surgery—has undertaken the systematic course of Surgery in Bishop's College, owing to the illness of Dr. Kennedy, the Professor of Surgery. Dr. Slack brings to his aid a very considerable Surgical experience, having been House Surgeon of Charing Cross Hospital, London, for several years.

Dr. George B. Shaw, Professor of Chemistry in Bishop's College, returned from Europe by the Allan S. S. Prussian, on the 22nd of October. He has been absent since the 29th of July.

Dr. W. George Beers, Dentist of Montreal, is at present on a visit to Europe. He recently read a paper before the Odontological Society of London.

Dr. J. B. McConnell, Professor of Botany in Bishop's College Medical Faculty, and in the College of Pharmacy, has been elected attending physician to the Protestant House of Refuge, Montreal. He has also been elected assistant surgeon of the 1st (or Prince of Wales Rifles) Battalion Volunteer Militia of Canada.

Dr. Wallace Clarke, M.D., (McGill College, 1871) has removed from Marquette, Michigan, to Utica, N.Y. We believe his prospects are exceedingly bright in his new sphere of labor.

Dr. David A. Hart (M.D. Bishop's College, 1874,) has removed from Montreal to Bedford, Que. and is, we learn, doing well.

Dr. Cameron, House Surgeon of the Montreal General Hospital, acted as surgeon to the Allan Mail Steamship Sardinian, which arrived in Montreal on the 7th October. This was the maiden trip of the Sardinian, which is the latest addition to the splendid fleet of the Allan line.

Dr. Thomas Johnson Alloway, of Montreal, in conjunction with Dr. J. B. McConnell, has been elected attending physician to the Montreal Protestant House of Refuge.

Dr. Saunders, late Demonstrator of Anatomy in the Royal College of Physicians and Surgeons of Kingston, has commenced the practice of his profession in Montreal.

BIRTHS.

In Montreal, on the 12th October, the wife of Dr. Rourke of a son.

In Montreal, on the 9th October, the wife of Dr. Simpson of a daughter.