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THE

CANADA LANCET

A MONTHLY JOURNAL

—OF—

MEDICAL AND SURGICAL SCIENCE, CRITICISM AND NEWS.

EDITED BY

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Original Communications.

CORTICAL EPILEPSY—A CLINICAL LECTURE.

BY DAVID INGLIS, M.D.

Professor of Mental and Nervous Diseases, Detroit College of Medicine. Member American Neurolgical Association.

(Continued from August Number.)

You see then, gentlemen, that a case of cortical epilepsy serves as a pathological experiment. We demonstrate the fact of special cerebral centres, and it serves also as a physiological experiment to explain in part the mode of action of the brain matter. It is by such uses that we get the real value of strange phenomena. Leaving these general, but by no means secondary considerations, and confining our thoughts more particularly to the special points about cortical epilepsy, we ask first in regard to its causation. The causes may be grouped into two classes: 1st, those to which I have already alluded as located in distant parts of the body, commonly called reflex; let me reiterate that you should in every case search diligently for these, bearing in mind both the fact that the irritant point may be located in the most unlikely place, and at the same time the irritation may be so slight as to give little notice of its particular location. Hence you must search, for instance, the entire length of the alimentary canal. Delayed or irregular, or even simple dentition, irritants in the stomach or bowels, or perhaps an anal fissure, any of these may be sufficient to cause the cerebral trouble. In like manner you must make a complete examination of the generative organs. By the way, I mean in males as well as females. The medical profession runs so much to gynæcology, that the male sexual organs are oft-times neglected. The prepuce, especially in children, must never be overlooked, and I have become satisfied that quite a number of obscure cases of nervous disturbance depend upon abnormal conditions of the testicles. A varicocele causes but very trifling distress, yet I am certain that many cases of marked nervous depression are due to nothing else. I cannot go into detail further, but am reminded of that grand old teacher, Professor Traube, of Berlin.

He used stoutly to maintain that to make a proper diagnosis, we should make a complete physical examination of our patient from the top of his head to the soles of his feet, not figuratively, but actually. Indeed he used to compel us to make a diagnosis of a case before the class in that manner. We had to make a diagnosis, as the advertisements for the recovery of stolen goods sometimes read, "No questions asked." And the wisdom of his advice every old practitioner knows. For instance, none of your patients will ever voluntarily complain to you of her high-heeled shoes, but you may not infrequently cure a lame back of long standing by cutting down the heel. Patients will not think so lightly of you as to so much as mention such an ignoble thing as a "corn," but you need to search even for corns.

The second class of causes of cortical epilepsy are those which directly affect the nutrition of the brain substance. It would lead too far to enter to-day upon the subject of the nutrition of nervous matter; let me only say that a large and important class of nervous diseases are what we term functional. By that we simply mean that a *post-mortem* examiuation reveals no change in the brain substance which is visible either to the naked eye or with the aid of the microscope.

Mentally, we cannot conceive that there is no change in the brain cells, but we are obliged to believe that the processes of nutrition in the cells are in some way affected, even if we cannot see evidences of the change. Still it remains true, that the causes of nervous disorders, such as cortical epilepsy are, thus sometimes nutritional or, as it isoften called, molecular.

In other cases we find a certain area of the cortex visibly affected by lesions within the cranium. The cause may be traumatic, and this is by no means rare.

Here again you will be compelled to search diligently, for patients often forget an injury long

past, not realizing that slowly increasing pathological changes may follow an injury at a late date.

Traumatisms may be either in the nature of fracture with depression or an immediate hæmorrhage within the skull, or, and this is by no means uncommon, the injury may set up slow inflammatory processes in the membranes, or a thickening of the skull, or the formation of a thorn of bone. These processes may, by pressure or congestion, set up the irritation which results in the epileptic explosion. They very commonly, however, act by shutting off the circulation to a certain extent. If you will recall your anatomy you will remember that the cortical substance of the hemispheres receives its nutrition by means of a vast number of minute short arterioles which penetrate from the pia mater for a distance not much greater than just the thickness of the cortical substance. If now a slow inflammatory process (with its usual result of a deposit of new connective tissue) takes place in the pia mater the induration which finally occurs in the new tissue, shuts off materially the free flow of blood to the cortex. In this way one can easily understand why it is that the symptoms follow not always immediately, but often after the lapse of a considerable time after the injury, hæmorrhage or other exciting cause. Another cause of cortical epilepsy deserves mention particularly, that is sunstroke. This cause is apt to be overlooked because the subject does not always have a history of being totally overcome by the heat. Quite often it is only by special questioning that you will learn that the patient has been to a greater or less extent affected by intense heat, and yet I am certain that a sunstroke, even a partial one, may set up lasting changes in the cerebral, more particularly the cortical circulation. The fact sometimes brought up in objection to this conception, to wit, that the *post-mortem* examination shows no adequate change, can be answered by this. Varicose veins of the leg, even of great extent, disappear at death. At the *post-mortem* you may find a chronic ulcer, while the varicose veins which caused the stagnation and starvation, resulting in the ulcer, may not show at all. So, too, permanent dilatation of the superficial vessels of the cortex, with the consequent slowing of the blood stream and resulting impairment of nutrition, can readily disappear after death. Besides these local causes, I must mention general causes, such as the various constitutional infections, especially syphilis and tubercolosis; also causes which tend to marked anæmia, as for instance, severe hæmorrhage.

Again, we must not omit to look for various toxic disorders, notably uræmic poisoning. Do not forget that this search for causation is not an idle curiosity, but that often the removal of some such cause, when it has been found, may lead to the restoration of your patient.

In the case which we present to-day, the cause seems to lie very clearly before us. A severe blow upon the left side of the head is followed, after an interval of about four months, by a cortical epilepsy which is very distinctly localized as originating in the ascending frontal and parietal convolutions of the same side. But again I must warn you not to hastily accept even such a clear case as this. It is the universal tendency to take easy and short views, but if you neglect to loook farther than the surface phenomena, you will often fall into grave errors. For instance, in this case, you attribute the epilepsy to the blow, to a pachymeningitis consequent upon it; but what bearing upon the case then do you attribute to the profuse hæmorrhage at the time of her miscarriage; to the fact that it was at the next menstrual period following that the seizures first began, that the next seizure then occurred at the next menstrual period? Again, let us not forget that from about the time that the second seizure occurred she has had a pretty continuous headache, not upon the left, but on the right side; also, that since September 8th she has had a paresis of the right abducens. You have said nothing about the nervous wear and tear of a wretched married life, nor of the using up of vital force involved in her frequent child-bearing and miscarriages. You see, gentlemen, the thing is not simple after all. Not to delay too long over this point, I will simply say that the striking limitation of the convulsions leads me to believe that only a small area of the cortex is involved, and that while the causes last mentioned have probably all had their share in getting her ready, that I think it altogether probable that the blow at Christmas was the factor which determined the localization.

PROGNOSIS AND TREATMENT.

These points can, very conveniently, be taken up together, because the one depends so closely

upon the other. In very many of the diseases which you will be called upon to treat, the general tendency is so distinctly toward a natural cure, that you can make a prognosis which does not depend upon treatment; but in the case of epilepsy, the tendency is in general markedly in the other direction. A case of localized epilepsy is likely to continue, indeed it is likely to involve a constantly increasing area, so that what is, at first, only a curious and seemingly slight motor disturbance, tends to approach in character the more severe form of general epilepsy. This, in turn, involves the possibility of mental deterioration. Here the expectant plan of treatment is never justifiable. Indeed, so marked is this tendency to the establishment of a convulsive habit, that you ought to use the utmost promptitude in your treatment.

A case may, for instance, occur in which the most distinct relationship can be traced between some local irritant and the convulsive seizures. Can you *promise* your patient that upon the removal of the cause the convulsions will cease? No; for unfortunately the cortical mechanism may have set up the habit of periodical tempestuous discharges. It is a good deal like a horse which has always been a steady driver, if from sudden fright he runs away once, you need to watch him; but if he runs away a second time you had better sell him, for the probability is very strong that he will ultimately break your bones. The longer the exciting cause is allowed to act the greater the liability that, even when you succeed in removing the, cause the convulsions may still continue. It becomes evident then that that part of the treatment which consists in the removal of the cause is an important one, not to be too long neglected. I cannot forbear to caution you however, even while I urge you to prompt and decisive action. Seek diligently for any exciting cause and remove it, if possible, early. In many instances you will do well to remove some abnormal condition even if you are by no means certain that it is the exciting cause—for instance, an elongated prepuce can be removed, or some abnormal teeth, or similar conditions rectified to the general good of the patient. even if not surely affecting his special symptoms. But my caution is this, that you do not perform any of the graver operations, such as removal of an ovary or opening of the skull, on such insufficient grounds. You may think such a caution quite needless, but there is a painful suspicion in the minds of the profession that some zealous surgeons have removed ovaries for conditions which a thorough course of medication and hygienic treatment might have cured quite as successfully and with much happier outcome. To the zealous among you therefore, I commend the plan of judging carefully and before resorting to severe measures to try faithfully the milder ones. To the conservative among you I warn you against too long delay. If after thorough medicinal and hygienic treatment you find your patient's condition unimproved, then in view of the probable end of a case of epilepsy, we are certainly justified in performing even grave operations if they hold out a reasonable promise of help. If then the source of irritation seems to be in the ovaries, their removal is justifiable, and that too even if their removal does not successfully relieve the epilepsy. We are charged simply to do the best we can. This brings us to the subject of

TREPHINING FOR EPILEPSY.

It is but a few years since the operation of opening the skull was looked upon as one of the most serious of surgical procedures, and I find that that feeling has, by no means, been generally changed. The great mass of the members of our profession remains always conservative, and wisely so. Changes in methods of procedure are very slowly adopted. Hence it is that the practice of antiseptic surgery has, in spite of the marvellous results already achieved, not yet been generally adopted. Nevertheless, it remains a fact that the practice of antiseptic surgery has entirely changed the estimate put upon the dangers of trephining. If antiseptic surgery had accomplished nothing more it would still be glory enough that it has opened up the possibilities of cranial surgery. The consideration of the methods, precautions and limitations of cerebral surgery it is not in my province to discuss with you. Let me simply introduce the subject to your attention and further consideration, and give again a caution. You, gentlemen, will enter upon your professional work free from the conservative bias which unavoidably hampers many of those who have been in practice for many years. Your greatest danger lies in too great rashness. Remember the old saw, that

"fools rush in where angels fear to tread," and while you go out prepared to carry out the results of the latest progress in medicine and surgery, carry with you a determination to use careful judgment.

In this matter of cortical epilepsy, the operation of trephining has already accomplished certain definite results, and the next few years will probably add to the accuracy with which successful results can be achieved.

At present we may consider the following points as established :

1st. That the operation is a legitimate one. It is however to be presumed that this, like any other of the graver surgical operations, ought not to be done until the failure of less dangerous methods and the severity of the case renders further action necessary.

2nd. That the operation should not be done unless the patient presents symptoms which, with a reasonable degree of certainty, point to the locality of the initial point of discharge.

3rd. That the operation is most likely to prove successful in cases due to the presence on or near a cortical area of something which acts as a foreign body. This may be a depressed portion of the skull, a spicula of bone, a localized thickening of the skull or membranes, a blood-clot or some neoplasm.

4th. That in case the operation reveals no organic or removable lesion, it is still justifiable to remove a portion of the cortical substance. Such a procedure brings about a corresponding loss of motor power, but even in case the paralysis thus produced remains permanent, it is nevertheless better for a patient to go about with a partial paralysis, rather than with a convulsive disorder which tends, ultimately, toward dementia.

As with the removal of reflex causes, so with the removal of intracranial causes ; bear in mind that your prognosis, as to the result of operation, must be guarded, for the epileptic "habit" may still continue.

I have thus, gentlemen, utilized this patient as a text for some of the considerations bearing on cortical epilepsy. There remain still other points of interest, which we must leave for the present, for instance, the matter of non-surgical treatment. Let me simply say that while medicinal treatment seems, for the present, to control the frequency of the seizures of our patient, and we consequently delay any operative interference, that with such a history and such a definite group of localizing symptoms, if our patient gives evidence of progressive cerebral disorder, I shall advise the operation with great confidence in its affording help.

21 State St., Detroit Mich.

A PLEA FOR ELECTRICITY IN MEDICINE.*

BY DR. C. R. DICKSON, TORONTO.

That the subject of electricity is not well understood by the mass of general practitioners none will deny ; that it does not occupy the position in therapeutics it deserves many will question ; that its field of usefulness may be greatly enlarged, and that it may be relied upon to act with reasonable certainty many doubt and will continue to doubt. Why should this be so ? The answer is plain. Our profession is one in which haste is made slowly—often very slowly—and perhaps it is better that caution should mark our path, at least, safer for our patients.

Where are we to learn the fundamental principles of this agent that has been until recently enshrouded in such a cloud of mysticism ? The instruction given in our colleges is most meagre in this direction, and patient study in books, all of which are most disappointing, often assuming an acquaintance with the subject which they are trying to teach, proves very irksome ; and experiment, the best method of all, takes much time and means, neither of which can well be spared by the majority of us ; and so a faradic machine is purchased and a book of instructions, and "fools rush in where angels fear to tread." All goes well and the new broom sweeps clean, but the application takes up too much time, and finally the faradic machine is left in charge of the patient, who allows the zinc element to remain in the fluid all the time perhaps, and when the battery arrives home it may be a thing of beauty still, but by no means is it a joy, but rather a decided vexation and finally is sent to the instrument-maker for repairs. This process is repeated until at last the unfortunate article is one day thrust aside to

*Read before the Ontario Medical Association, July 1889.

accumulate the dust of ages, and electricity voted a failure. Or, perchance, our practitioner is more aspiring and a galvanic battery is purchased; but it would take too long to even imagine all the mishaps that may befall it, as it was formerly constructed with a view to getting out of order with the greatest facility on the slightest provocation, and in that respect was a marvel of perfection. Even machines of recent construction leave much to be desired, and in secondary batteries which promised so much we have been greatly disappointed. Whether the Gassner dry cell will prove satisfactory, remains yet to be seen. The foregoing is not exaggerated in any respect. Another source of trouble is a very dirty sponge, which when removed from its metal electrode displays a fine illustration of the process of oxidation, a process which electricity encourages to give it an excuse for not working. No wonder that disappointment attends such labors.

But look with me on the other side, for every cloud has its silvery lining. The man in this case is fortunate in having obtained a knowledge of the chemistry and construction of batteries, and careful reading and patient experiment have extended his acquaintance. He courted electricity, and though at first she played the coy maiden and made fun of his efforts, at last he won, and now they are firm friends; and while he keeps her house well stored and the path bright and clean, she will walk or run in it at his bidding, in her own mysterious fashion. And where will he find her scatter her sunshine most freely? In the haunts of pain will her work be most apparent. Neuralgia will flee when she comes, be it supra-orbital, infra-orbital, intercostal, epigastric or ovarian, and even that major form, sciatica, acknowledges her rule, and headache, in the majority of its varities, also owns her sway. The same applies to many forms of rheumatism. Even the pangs of that dread foe, angina pectoris, may in many instances be alleviated.

But she is not content with merely the relief of pain, for her work is also curative. Her wonderful power of exciting absorption may often be utilized with telling effect in chronic articular rheumatism, as also, in the treatment of indolent ulcers. The action of electricity upon the sympathetic system is productive of the most satisfactory results in goitre, and promises much in the direction of treatment of such hitherto intractable diseases as diabetes mellitus, while it would account for its power over indigestion, dyspepsia, and that every prevalent complaint, constipation. Nasal catarrh and several forms of skin disease are frequently amenable to this treatment. In the field denoted by that convenient though vague term, neurasthenia, as might be easily imagined capital results will follow the use of electricity, and in that rare disease para-myoclonus-multiplex, it is also of value.

The preceding observations apply mainly to galvanism. I will barely allude to the use of electricity in the many forms of paralysis, as to do more would materially lengthen a paper which it is my desire to keep as short as possible, and here its use has been more frequent.

And now a few words as to the faradic current. Perhaps the quickest results from its use will be experienced in hypochondriasis and hysteria, in both of which diseases it may be combined with advantage with the galvanic current. The power of faradism to excite muscular contractions and thereby increase muscular nutrition may be taken advantage of in the treatment of phthisis, where the accessory muscles of respiration may be strengthened by its use, and much comfort given thereby.

In aphonia, whither hysterical or not, its use is attended with speedy and beneficial results if there is no organic lesion present. In disorders of the alimentary canal dependent upon lack of muscular tone, its use is productive of good results.

I have by no means exhausted the list of diseases in which electricity, galvanic or faradic, has proved palliative or restorative in my own practical experience; nor have I laid down the special line of procedure to be adopted in each case, as to do either would occupy the time of this Society. It also leaves the field open for discussion should such be desired. My object is to excite a greater interest and stimulate investigation in a rather neglected though prolific branch of therapeutics.

NEW CHAIR FOR A MEDICAL UNIVERSITY.—Dr. Charles F. Stillman, author of a recent work on Life Insurance Examinations, has lately been appointed to the Chair of Physical Examination for Life Insurance, lately established in the University of Vermont.

VAGINAL HYSTERECTOMY WITH ABDOMINAL OVARIOTOMY.*

BY A. GROVES, M.D., FERGUS, ONT.

In bringing this case before you, I do so with the hope that it may in some degree, however slight, influence others to advise or adopt operative treatment in the early stages of malignant disease of the uterus. Whether the disease be limited to the os and cervix, or involve the body of the organ, complete ablation, to my mind, offers the best prospect of a permanent cure. It must be admitted that vaginal hysterectomy is a serious and difficult operation, not lightly to be undertaken; but one who has, and wo has not, witnessed, the terrible ravages of uterine cancer, will agree that any operation, however difficult, is worthy of consideration when the only alternative is death in one of its most miserable and loathsome forms. It is hard to imagine any condition better calculated to excite pity, than that of a woman in the last stages of malignant uterine disease. The nights of agony and days of pain which drugs barely alleviate, the horribly offensive odor arising from putrid discharges mingled, it may be, with urine and fæces, for perforations of the bladder and rectum are by no means unheard-of complications, the burning excoriations bathed in acrid matter—all go to form a picture too well known, and for the cure of which, up to recent years, science had nothing to offer. If, then, this case should tend to influence you in favor of attempting the radical cure of uterine cancer or sarcoma, I shall feel that I have not wholly wasted your time.

On the fourth of last May I first saw the patient whose case I bring before you. I found a lady 69 years of age, the mother of several children, and who had enjoyed good health up to about sixteen months since, when, as she expressed it, "her changes returned," and the discharge of blood was more or less constant until the time of my visit. Latterly it had become quite profuse at times, and there was also a considerable discharge of badly smelling pus. She was quite pallid and was rapidly losing flesh and strength. On making an examination I found the uterus enlarged so that a sound passed easily five inches and its withdrawal was followed by free hæmorrage. Low down in the abdominal cavity a tumor was easily made out, slightly to the left of the median line. It was not clear that this was separate from the uterus, for every movement of the one caused a corresponding motion of the other; but seeing that small ovarian tumors with short pedicles are sometimes differentiated with difficulty from uterine tumors, I left the exact nature of this an open question. My diagnosis was malignant disease of the uterus, with possibly a small ovarian tumor, and I advised operative treatment as holding out the only chance of recovery. On the 7th of May, Dr. Rogers, my partner, saw her with me and agreed as to the diagnosis and also as to the advisability of an operation. Accordingly, on the morning of May 8th, I operated with the assistance of Drs. Mennie, Rogers and Millican. The patient having been chloroformed, the uterus was drawn down as low as possible and a ligature passed through the cervix, by means of which forceps and tenacula could be dispensed with. The uterine cavity was thoroughly washed out, in order to remove all pus and prevent the escape of septic matter into the peritoneal cavity at a subseqnent stage of the operation. Having incised the mucous membrane around the cervix and separated the uterus from the bladder, the peritoneal cavity was opened through Douglas' cul-de-sac, and on passing my fingers up over the fundus an ovarian tumor was found, which it was decided to remove by abdominal incision. The abdomen was immediately opened in the ordinary manner and the tumor, which was about six inches in diameter and semi-solid, removed without difficulty. Placing a sponge in the abdominal wound, I brought down the fundus of the uterus to the vulva, ligatured the broad ligaments and separated the uterus from its attachments. There being no oozing of blood the abdominal wound was sutured, and a couple of stitches put in the vaginal wound also. A drainage-tube was left in vagina and a catheter in the bladder. The re-action was given and she vomited only once. Evening temperature 99½; slept considerably during the night, and had a temperature of 99 next morning, which in the afternoon went up to 100⅕. Slight discharge from drainage tube, little or no pain, considerable thirst. Third day: morning,

* Read before the Ontario Medical Asssociation, June, 1889.

temperature normal; evening, 99, nothing coming through drainage-tube, which was removed. After this time the temperature never rose above the normal, and the patient progressed without an untoward symptom, to recovery.

Correspondence.

To the Editor of the CANADA LANCET.

SIR,—Under the head of "*The care of the Insane*," in your August issue of the LANCET, you animadverted at length on "the ponderous mechanism of the existing laws for the admission of an insane person into one of our asylums," and you say "the difficulty seems to lie in the magisterial supervision of those held to be insane."

You seem either not to know, or have omitted to mention, that more than one-half of the insane are now admitted to our asylums without coming under magisterial supervision, and a much larger number, if not the whole, might be admitted without it. I fear that in too many cases it is done for the purpose of being relieved of expense and trouble. It may be said that patients who are violent have to be sent to gaol for want of room in the aslyum. This may have been true to some extent in the past, but without speaking for other asylums I may say that every application made to this asylum for the past two years has received prompt attention, and a vacancy awarded at once. I cannot therefore too strongly urge upon the profession and public the necessity of making application to the Asylum, instead of the magistrate, for the admission of lunatics, thus giving them the advantage of early treatment, and saving the poor unfortunates, who have already enough to bear, the further reproach of being thrust into gaol to consort with common criminals.

Yours,

JAMES RUSSELL.

Asylum for the Insane,
Hamilton, Aug. 10th, 1889.

FROM OUR LONDON CORRESPONDENT.

LONDON, Aug. 12th, 1889.

There is certainly no city in Great Britain offering greater opportunity for the study of diseases of children than Liverpool, and as far as I have seen, no hospital where the work is better or more thoroughly done. There are two resident medical officers, a surgeon and a physician, and the amount of cases these two men have to watch for their respective chiefs is very great. Of course the scrofulous diathesis is a prominent factor in the ailments of these little ones; the amount of deformities and variety is appalling, and one cannot be but thankful that such sights are indeed a rarity in Canada where food and fresh air is so easily obtainable. This stunted growth and wizened face, bent and distorted limbs has one other cause, which cause is now being prominently brought before the public by the London press—that of marriages contracted by mere boys and girls. These lower classes frequently make parties of four or six couples and go off on a sort of matrimonial picnic. The *Daily Telegraph* of July 19th, says, in an article entitled "The Weeds of Whitechapel,"—"Here is the base on which Whitechapel poverty stands; here is the difficulty which makes reformers hopeless. Troops of boys and girls marry and are parents of rickety children before they are out of their teens. They have no more forethought than rabbits, and they give to the world whole swarms of miserables, who make even a good man of philanthropic tendencies cast up in his mind the chances of civic collapse. When I have seen that wholesale, unhallowed matrimony, —one lot (twenty couples) were married in my presence, and I believe there was not a ring or a washed hand amongst them." The writer goes on to say that he hopes the authorities will try to stop these horrible early unions, but even if they did that these people are so entirely void of morality, that they would live together and dispense with the marriage vows, as thousands do now. This factor we rarely ever have brought before us in Canada, although rickets is common enough, but I never have seen such extreme cases, and probably never will outside the great centres of England. Regarding treatment, I can say but little, as it is about the same as anywhere else, that is, the medical treatment. The surgical I will probably say something of in my next letter. As the Samaritan closes for operative work this week until October, every one has been crowding there —the operations came thick and fast. The only one of note being performed by Knowsley Thornton—nephrectomy on the right side and nephrotomy on left. The woman had symptoms for over

a year, pointing to stone in kidney. The section revealed a kidney, or rather shell, immensly dilated and full of water. No pus to be seen anywhere. The incision was made through the linea semilunaris, and the dissection and separation of capsule very simple owing to the parts being so much stretched, that when fluid was evacuated the sac could be easily brought to the surface and gradually separated with the fingers. Thornton did not tie the ureter and cut it off close, but brought it through the incision and kept the end outside by piercing with a safety pin; his reason for so doing being that he found in his fatal cases that this ureter was buried in a deep abscess sac, which abscess probably was caused by the ureter, so that when the sac constricts this ureter is grasped tightly in the cicatrix; he then examined the left kidney and found a stone in the pelvis; this was taken out through an incision about one inch long—the scalpel being plunged through the substance of the kidney with one stroke—the kidney being pressed firmly into the loin by the left hand in the abdominal cavity. A drainage tube (rubber) was placed through the incision, and a careful toilet made. The woman so far, five days after, is doing extremely well. Mr. Thornton tells me he would never try to take a kidney out through the loin under any circumstance, no matter how small; the abdominal incision being much more easily managed in every way, the command of the sac more perfect, and the drainage quite as good. The stones were of equal size, mulberry calculi and very prickly, almost like a green horse-chestnut. Mr. Thornton has done thirty-three cases with six deaths, a wonderful performance surely. Dr. Bantock did some four cases of section, all simple. Mr. Meredith had a number of cases, the only one of note being a double pyo-salpinx, which, on examination, through incision, seemed impossible to get at, a complete roof of adhesions covering the uterus and ovaries, but the most patient dissection taking two and one-half hours completed successfully a very difficult operation. There are a great number of Canadians here, amongst whom Dr. Thorburn, Jr., is doing good work on throat and chest, and is at present assistant to Dr. Lennox Brown.

NEW YORK POLCLYNIC. — Dr. H. C. Coe has been elected to the Professorship made vacant by the death of Professor James B. Hunter.

Reports of Societies.

CANADA MEDICAL ASSOCIATION MEETING AT BANFF.

The meeting at Banff, August 13th and 14th, will be remembered by all those who attended, as one of the most pleasant outings which the medical profession have enjoyed for many a year. The C. P. R. contributed to the comfort of the members and delegates in its usual excellent style. It is not often that members of the Association have an an opportunity of spending so long a time together; and the length of the holiday, together with the desire to see the far west, prompted many to accept this opportunity. We may say it was one grand excursion, indeed so novel and varied were the scenic attractions, that it threatened to interfere with the regular work of the meeting, and, as it was, numerous were the groups of excursionists who could be seen accepting the warm hospitality of the trickling spring, cooled with a pinch of *spiritus frumenti*. Notwithstanding all this, however, the meeting was a scientific success.

Dr. Adam Wright, of Toronto, contributed the first paper, which was entitled "Hæmatoma of the Vulva and Vagina," and was freely discussed by Drs. Marcy, of Boston; Ross, of Toronto, and Stewart, of Truro, N. S.

"The Climate of Alberta" was the subject of a paper by Dr. Kennedy, of Fort MacLeod, and was full of interest to members of the Association, who showed the keenest appreciation of the subject. The climate of Alberta is generally regarded as the most healthful in the Dominion, and this opinion was sustained by the paper of Dr. Kennedy. Pneumonia was a rare disease and phthisis was seldom met with in the territory. The climate was free from all sudden changes, and it was urged that on account of Alberta being possessed of all the advantages and none of the disadvantages of Colorado, patients suffering from consumption would find more satisfaction in coming to the Northwest than in leaving their own country.

The discussion following was extremely interesting and somewhat humorous, and was taken part in by Drs. McInnis, of Edmonton; Henderson, of St. Paul's; Praeger, of Nanaimo; Bentley, of New Westminister; Oldright, of Toronto; Henderson, of Kingston; McLennan, of Trenton, and others.

Dr. Gibney, of New York, followed on the subject, "The Treatment of Hip-Joint Disease." Drs Connor, of Cincinnati; Strange, of Toronto; Roddick and Shepherd, of Montreal; Cameron, of Toronto, and others continued the discussion.

Dr. Buller, of Montreal, presented an interesting paper on "Preventive Deafness," in which he drew attention to the importance of immediate attention being paid to the slightest symptom of deafness in childhood.

Dr. Stewart, of Montreal, read notes of a number of cases in which sulphonal, a new drug, used to relieve sleeplessness, had been used. Investigation has proved sulphonal to be highly useful, and the indications are that it will likely take the place of morphia in many cases. It has no efficacy for the relief of pain, but given in doses from 15 to 50 grains it produces sleep which is not followed by the unpleasant effects of the commonly used narcotics. There seems to be no danger of patients acquiring the habit, the same as with morphia or chloral, and, besides, it is not a depressant to the heart's action as these latter drugs are known to be. Dr. Stewart had found twenty-grain doses to produce very satisfactory effects. Dr. Whittaker, of Cincinnati, and others who have had experience in the use of sulphonal, endorsed all that Dr. Stewart claimed for this new remedy.

Dr. Grasett, of Toronto, presented a paper on the treatment of Colis' fracture, and an interesting discussion followed, in which Drs. Cameron of Toronto; Sloan, of Blyth; Stewart, of Truro; Smith, of Seaforth, and others took part.

Dr. Whittaker, of Cincinnati, contributed an interesting paper on "Varicella," an extremely common disease of childhood, but one to which this distinguished American physician gave a good deal of interest by his well-written essay.

Papers read by title:—H. B. Small, "Mineral Springs of Canada"; Stirling, "Vertigo, and Eye and Ear Affection"; Lapthorn Smith, "A Common and Easily Preventable Cause of Uterine Displacement"; John Campbell, Seaforth, "A Case of Necrosis following Compound Fracture."

The Nominating Committee reported as follows:

President-elect—Dr. Jas. Ross, Toronto.

Vice-Presidents—Dr. D. Eberts, Dr. Brett, Dr. R. Spencer, Dr. Bruce Smith, Dr. E. P. Lachapelle, Dr. Holden, Dr. L. Johnston, Dr. McLeod.

Local Secretaries—British Columbia, Dr. Prœger; North-West Territories, Dr. Rutledge; Manitoba, Dr. H. Higginson; Ontario, Dr. J. J. Farley; Quebec, Dr. John Elder; New Brunswick, Dr Raymond; Nova Scotia, Dr. Muir; Prince Edward Island, Dr. Waburton.

Next place of meeting, Toronto, early in September.

The majority of the members of the Association, after the meeting, took advantage of the liberal arrangements afforded them for a trip to the Pacific.

Selected Articles.

ON THE DIAGNOSIS AND TREATMENT OF GASTRIC ULCER.

BY WILLIAM M. ORD., M.D.,

Physician to, and Lecturer on Medicine at St. Thomas' Hospital, London, Eng.

(Continued from August No.)

We may next contrast gastric ulcer with the graver malady, malignant disease of the stomach. Pain is, of course, a very frequent symptom of this affection; pain mostly increasing in severity as the disease advances, and comprehending many varieties from dull to acute. It may be aggravated after meals, or it may attain its greatest intensity when the stomach is empty. But its extension is usually much larger than that of gastric ulcer. Vomiting is common, and while having a certain relation to food-taking, occurs at all sorts of intervals. There is very often ineffective retching when no food has been taken. In considering the characters of the matters vomited, we cannot avoid thinking most of the symptom of hæmorrhage, but in the first place we may notice that the vomit, whenever occurring, is usually of a strong acid reaction, and that, besides mucus, there is generally a considerable quantity of fluid, evidently a secretion of the stomach. As in the case of ulcer, the position of the new growth goes far to determine the period at which vomiting takes place; and I think it cannot be doubtful that the character of the ejecta is very much determined by the position and character of the new growth. What we see thrown up by a patient having an ulcerating new growth in the middle of the stomach, is assuredly of a very different matter from what is observed in scirrhus of the pylorus. I think, though I should not like to be too dogmatic on the point, that the acidity in both cases is excessive.

The elements of this acidity have attracted a good deal of attention of late in France and Ger-

many. It is asserted that the acidity, in cases of malignant disease, is due to other substances than the hydrochloric acid which, as is generally believed, forms the main sourness of the gastric juice, various organic acids taking the place of the inorganic. And there are many who to-day believe that the existence of malignant disease, as opposed to non-malignant disease, may be fairly well recognized by studying the reaction of the gastric juice. The test most in vogue is the tetrethyl-damido-triphenyl-carbinol-oxalate, or vivid-green salt, a crystalline substance of a brilliant green color, which yields, when dissolved in water, a blue solution. Hydrochloric acid being added to such solution, effects a distinct color-change to the green. The organic acids fail to produce such a change. In applying the test, a solution of hydrochloric acid, of the strength found in gastric juice, is first applied to some of such solution in a test-tube; next, to an equal quantity of the same solution, contained in a test-tube of equal size, an equal quantity of the fluid filtered from the vomit or withdrawn from the stomach is added. A comparison of the contents of the two tubes will determine the comparative amount of hydrochloric acid present in the secretion of the stomach under investigation. It is strongly urged that a marked failure in the production of the green change is indicative of malignant disease.

During the last year, I have submitted this test to observation wherever it was possible, and have certainly obtained some interesting results; but not uniform enough to justify me in accepting the reaction as decisive, and these were cases of short, previous duration, which got well under treatment, and went out without any other sign of malignant disease. One of the difficulties of color-tests and solutions is, that the vomit in cancer very often contains blood; when this addition occurs, it is usually constant, and while, of course, varying in quantity, is not generally large. It is mostly in the "coffee-ground" form, but sometimes in the form of small, variously colored clots. This, of course, stands in great contrast to the large hæmorrhages at long intervals occurring in gastric ulcer of the young adult female. To revert here in greater detail to an interesting point relating to the quantity of matters vomited: As in ulcer, where the malignant growth is at the cardiac end or middle of the stomach, the intervals are short, and the amount brought up is comparatively small; but in growths near the pylorus or involving it, intervals as long as twenty-four hours, or more, are observed. The amount when vomited is very large, and the matter consists of a thin fluid with a sediment of digested matters, having a reddish-brown color. Such a vomit is generally teeming with *sarcina ventriculi*.

Tenderness is mostly found in malignant disease of the stomach. It may be acute or dull, and I believe that the intensity is very much determined by the position of the growth as well as by its nature. I believe that the ulcerative forms are the more tender, and I have certainly felt many pyloric tumors which were almost insensible to pressure. On the whole, however, tenderness, when existing, is much more diffused than that of gastric ulcer.

If we review what has so far been stated in the point of diagnosis between malignant disease of the stomach and gastric ulcer, save and except the chemical action of the gastric juice, nothing actually decisive has been put forward. The real test is the presence or absence of tumor, and the true method of diagnosis is to examine the epigastrium with the greatest care. As far as experience goes, tumor, if existing, can be felt in about seventy per cent. of the cases. The existence of a well-defined tumor, in association with more or less of the symptoms enumerated, will enable us, for the most part, to make a definite diagnosis. The tumors which escape manipulative detection are, doubtless, such as are situated on the posterior aspect of the stomach. Though they may here elude direct recognition, they still produce many of the symptoms described, and by pressing on deep-seated structures will introduce new signs enabling us to recognize their position.

In the final diagnosis, we have to remember that the simple gastric ulcer affects, for the most part, young women who are anæmic, but not cachectic; that cancer affects older people of both sexes, who are generally cachectic in appearance, and have pigmentation of the skin as well as anæmia. It may be noted also that, in malignant disease of the stomach, variations in the size of that organ are much more common than in ulcer. The importance of such variations, however, will be better seen when we come to the consideration of the diffused gastric ulcer.

The various functional disorders of the stomach, comprehended under the term dyspepsia, often simulate gastric ulcer. The two symptoms, pain and vomiting, may, in functional disorder of the stomach, be conspicuously present, but they are rarely present together. When present individually, they rarely have the same marked relation with food-taking as is observed in gastric ulcer, and if any tenderness is observed, it is not localized, and is associated with general hyperæsthesia. There is, of course, no tumor, no hæmorrhage, and no fever; moreover, there are usually present associated conditions of general nervous debility, or local irritations, which may favor or determine disordered action of the stomach.

Let us turn now to the diffuse form of gastric ulcer, observed more particularly in middle-aged persons of both sexes. The symptoms here again are mainly pain, tenderness, vomiting, and hæmorrhage. But the subjects are no longer

simply anæmic, and, on the other hand, well-nourished; but are often cachectic and wasted. The pain is, as a rule, much less acute than in the other form of ulcer, and the vomiting much more frequent and distressing. Tenderness in the locality of the stomach and in the whole stomach-area is generally present. The matters vomited are generally intensely acid, and very frequently contain blood, either in the "coffee-ground" form, or as soft clots of various color from pink to black. Such cases present, indeed, the strongest appearance of the existence of malignant disease of the stomach, and the more favorable diagnosis can be determined only by the absence of tumor, and the favorable results of treatment.

In illustration, I may quote two cases. The first was that of a gentleman, aged sixty-four, who consulted me for a pain in the epigastrium which which made his life miserable. It came on at all times, had no relation to food-taking, and when it came it took, as he said, "all the life out of him." He had no vomiting, and no other symptoms of dyspepsia, and had no tumor or tenderness. I prescribed many remedies, calculated as I thought, to relieve pain; but he was no better for any of them; so I took him to Sir Thomas Watson, who prescribed citrate of iron, regarding, apparently, the symptoms as neurotic. Under the citrate of iron he speedily obtained relief, which lasted for nearly a year. Then a relapse occurred, and to pain was added vomiting, occurring at intervals, large in quantity, and with evidences of the presence of blood. Although no tumor could be detected, more than one physician came to the conclusion that he had malignant disease. His sufferings lasted several years. Eventually he died, after an operation for stricture of the urethra; and on post-mortem examination a large, shallow ulcer, presenting no signs whatever of malignant disease, was found at the pyloric end of the stomach, but not involving the pylorus. The case has been, for me, always most instructive.

Let me quote another case. About two years ago, a man was admitted into St. Thomas' Hospital for gastric hæmorrhage. He was a horsekeeper, and had had a severe jerk from the ground, when putting a bridle on a horse. The jerk was followed by severe pain in the region of the cardiac end of the stomach, and by frequent, but small, hæmorrhage. He had suffered from gastric distress and occasional vomiting for some time previous. When I saw him, he had pain after food and subsequent vomiting. Blood was always present in the matters vomited, but not in large quantity; there was tenderness over the whole stomach-area, but no tumor could be felt. He was sent to me with a diagnosis of cancerous disease of the stomach. He was emaciated, anxious-looking, but not cachectic; nevertheless, on the whole, all his symptoms suggested malignant disease. But as I could feel no tumor, I ventured to hope that he had only gastric ulcer, and not the more serious malady. I treated him on this basis, and in three weeks he had lost all his local symptoms and had gained flesh. It is not necessary, at this moment, to enter into the details of treatment, inasmuch as I shall presently deal with them; but it may be said that he became well-nourished and strong, and has frequently presented himself since, in all respects fit for work.

In many cases of this form of ulcer, gastric hæmorrhage presents itself as a very serious symptom. It goes on from day to day, in addition to other symptoms and has a distinct and dangerous importance of its own. The blood often has a bright color and a spongy consistence. The reaction of the vomit is generally intensely acid. In some cases I have been inclined to associate, with the hæmorrhage, the idea of an erosive action exercised by an intensely acid gastric juice. In two cases of the kind, under my care in St. Thomas' Hospital, the exhibition of alkalies has been followed, first, by cessation of the hæmorrhage; second, by the disappearance of the symptoms of gastric ulcer.

PROGNOSIS.—Dr. Brinton, writing about thirty years ago, calculated from the statistics available at the time, that perforation occurred in between 13 per cent. and 14 per cent. of the cases of gastric ulcer.

There can be no doubt that his book on the subject led to a more general recognition of the disease than had before existed. Whether it be, that, instructed by his writings, I, for one, have been more ready to recognize the symptoms of the affection, or, that the character of the affection varies in successive decades, I am bound to say that comparing the number of cases presenting the symptoms of gastric ulcer and the number of deaths recorded, the proportion of deaths is much smaller than that arrived at by Dr. Brinton. This, perhaps, is what might have been expected. When Bright made his first great generalization, everybody who had albuminuria was condemned to death. We have learned in later years to make very different estimation of the symptom of albuminuria. And I think I may safely say of the patients who come under our care with such signs of gastric ulcer as Brinton and his contemporaries described, very few die.

TREATMENT.—We may now turn our attention to the subject of treatment, which seems to me to be of the highest importauce in gastric ulcer. The people who die of the disease are generally such as have been pursuing their occupations in spite of suffering and without precaution. Here and there, I think very rarely, one will die of hæmorrhage; now and again one will die of the signs of perforation. But I think that if we can

once bring a patient under through hospital treatment, such dangers may be averted; although in advance conditions, we can never overcomed the adverse influences of adhesion of the stomach to other parts, and deep ulceration.

My experience of the treatment of gastric ulcer leads me, in the first place, to attach great importance to simple physical rest. A physician is commonly called upon to deal with two very distinct classes of cases: first, those occupying beds in hospital; second, those consulting him at his own house, or coming as out-patients. The in-patients, kept in bed, and debarred from all movement that can be avoided, make much better progress than the others who are moving about. I must admit that, in private practice, I have experienced great difficulty in keeping patients as completely at rest as I could wish, and that the results of treatment of them are far less satisfactory than those obtained in hospital. I commend this point to general practitioners, who have much greater opportunities of following the patient's symptoms from day to day, than are open to the consulting physician. In practice, I hold it to be right that the consulting physician should always advise the patient to secure the care of a medical man near at hand, and under his guidance to carry out the first principle of treatment—physical rest.

Next comes physiological rest. No one can doubt that all mechanical indigestibles must be forsworn. All experience shows that, in relation to the comfort of the patient, meats, uncooked foods of all kinds, all mechanical indigestibles, and stimulants must be forbidden. After this large excision, idiosyncrasies of the patient have to be considered. Some can take milk and eggs, and soft farinaceous foods with impunity, while meat juices irritate them. Some can take the meat juices and not the milk food. Some can take nothing whatever without great suffering. Those who can take the milk and egg foods may leave us easy on the subject of their nutrition. Those who can only take the meat juices have but imperfect sources of nourishment, and in these cases, as well as in those cases wherein no aliment can be taken without pain, we are compelled to administer aliment by the rectum.

Of late years a good many nutriment suppositories have been invented, and have been much vaunted. They have a certain advantage in being more easily retained than fluid enemata, when the rectum is irritable. But, in a general way, I believe that fluid enemata are much more effective. They should consist of from four to six ounces of beef-tea and milk in equal proportions, with a drachm of Berger's "liquor pancreaticus," and should be prepared at a temperature of about 98° Fahr. Egg may be in certain cases added, and, where there is great exhaustion, a small proportion of brandy. In more than one case of gastric ulcer with severe symptoms, I have used such enemata for a month, allowing nothing to be taken by the mouth save water, with the result that the nurition of the patient has actually improved.

As regards treatment by drugs, I venture to say that generally very good results may be obtained. The treatment must be a good deal determined by the proportion between the symptoms of gastric ulcer and those symptoms supplemented by gastric catarrh. Supposing that we have the symptoms of gastric ulcer without gastric catarrh, I am in the habit of giving twenty grains of carbonate of bismuth with ten grains of carbonate of soda, and ten drops of tincture of belladonna, three times a day. If there be much sign of gastric catarrh, what I am accustomed to call Brinton's mixture, viz., ten grains of bicarbonate of potash, three grains of iodide of potassium, and three drops of dilute hydrocyanic acid in infusion of gentian, three times a day, is prescribed. The use of this mixture for a week or a fortnight will generally subdue the catarrh, and the subsequent use of the bismuth mixture rarely fails, in uncomplicated cases, to effect a cure.

Complicated cases will be generally much relieved by this, but rarely cured. By complicated cases I mean those to which I have already alluded, in which there are signs of adhesion or of deep ulceration. We must not forget the acute complication of hæmorrhage and perforation. In the treatment of persistent small hæmorrhage, I am not inclined to the use of astringents. As a rule, I should rely on a careful examination for the symptoms of the case, and should direct treatment to the removal of the causes of hæmorrhage, rather than use astringents in a blind way. I should use methods for the reduction of gastric congestion, for the neutralization of the excessive acids of the gastric juice, for the relief of hepatic congestion.

In the large hæmorrhages of the simple ulcer, the whole business is generally over before treatment can be instituted. But this does not mean that treatment is unnecessary. A large quantity of blood will have generally made its way into the intestines, where it proves a source of great irritation demanding instant relief. It is my practice to administer, according to the needs of the case, sulphate of magnesia, or sulphate of soda, with dilute sulphuric acid—a hinderer of decomposition—at intervals of two or three hours, until free evacuation has been obtained. These alkaline sulphates appear to me to be the most suitable aperients in all cases of gastric ulcer complicated by constipation. Given early in the morning, they lend effective aid to the operation of the mixtures already mentioned.

In what I have said I have given from individ-

ual experience. There are some physicians who advocate the use of caustics, such as sulphate of copper and nitrate of silver. There are others who advocate the use of opium and astringents; but all I can do is to tell what, in no inconsiderable experience, has appeared to me to be the most effective mode of treatment.

I should like to add a few words on the value of iodide of potassium in the treatment of gastric catarrh, whether simple, or complicating ulcer, or complicating malignant disease. Administered with the addition of some bicarbonate of potash or soda, it is, in my experience, a drug of inestimable value. It speedily removes a simple catarrh. It thereby removes the primary obstacle to the treatment of ulcer; and, in malignant disease, it will often, for a time, so far mitigate the symptoms as to make the patient think he is being cured. I have often found it in malignant disease relieve the patient for a time, and, I think, prolong life with marked diminution of suffering.

It will be observed that I have dealt with gastric ulcer clinically, as I undertook. The subject of the diagnosis of gastric ulcer must be constantly in the mind of the practitioner of medicine. It has been much in my mind for years. And what I put on record here, crude and elementary as it is, represents much careful thought and long observation.

PREVENTIVE INOCULATION.

GENTLEMEN,—In the year 1881, M. Pasteur laid before the members of the International Congress assembled in London an account of recent researches carried on in his laboratory, on the subject of preventive inoculations for chicken cholera and splenic fever. Since that time nearly eight years have elapsed, and we may ask ourselves what has become of the work then begun: has it fulfilled its promise, and what place have the new principles which it involved taken in the science of to-day? It was on these questions that M. Pasteur intended to have spoken to you this afternoon, but the state of his health did not permit of his availing himself of the honor done him by the President and Council of the Royal Society in asking him to give the Croonian lecture this year. He therefore proposed that I should speak in his name, though personally I cannot hope to speak as he would have done of the preventive inoculations which he himself thought out and initiated. My sole title for addressing you is that of my being M. Pasteur's collaborator, having had, in fact, with Messrs Chamberland and Thuillier, the honor of being associated with him from the commencement of his researches upon the prevention of contagious diseases, and, further, that I have been an eye-witness of everything which I shall lay before you.

Most infectious diseases never recur, and thus small-pox, measles, and typhoid fever rarely occur more than once in a life-time. Further, a first attack of an infectious disease, even though a slight one, renders us safe from these diseases for a certain time; and it is this fact, coupled with the non-recurrence of infectious maladies, which has led to the discovery of preventive inoculation.

Instead of waiting till we are struck down unawares by a sudden attack of the malady, frequently during an epidemic of high fatility, and under conditions very unfavorable to our power of resisting it, we now seek to meet it at some favorable moment, and guarded by all those precautions which we know are capable of greatly diminishing the danger. In the place of natural, that is ordinary, infection, unforeseen and over which we have no control, we have now substituted a mode of artificial infection, prepared in such a way as to ensure exemption with as little risk as possible.

It was against small-pox, that for the first time, preventive inoculations were had recourse to. An involuntary experiment, and one, unhappily, too often repeated, had shown that the liquid of the small-pox pustule is virulent, that is to say, that this small-pox lymph, introduced into the body through a wound in the skin, has the power of communicating the disease to a person who has not previously suffered from it. Inoculation with small-pox was, therefore, easy; all that was required for its production being a prick from a lancet charged with small-pox pus. It was, therefore, the custom to endeavor to find cases of mild small-pox, from the pustules of which a virus was taken supposed to be non-malignant, but yet capable of subsequently rendering exempt against the virulent disease those who were inoculated by such a mild virus. It is well known to you how widely such inoculations spread, though far from being of an innocent character, for the inoculation which was supposed to give the disease in a mild form often produced it very severely, and sometimes even the inoculation was the cause of death.

How great, therefore, was the progress made by Jenner in replacing inoculation by vaccination, that is to say, in substituting for a severe illness one which is invariably insignificant, and yet it is efficient protection against infection by small-pox!

Although from the beginning of this century we have enjoyed the inestimable benefit of Jenner's vaccination, we still have not yet completely fathomed its meaning. What is the relation between vaccination and small-pox? Why does the vaccine disease of the horse and the cow, inoculated into man, render him exempt from small-pox? Is the virus of vaccine merely that of small-pox modified, or are vaccine and small-pox two different maladies.

It would have seemed that these questions were easy to resolve as both small-pox and vaccine admit of experimentation upon them; yet though always under discussion since Jenner's time, they yet remain without any definite solution having been arrived at. Jenner's great discovery, which seemed to open so wide and hopeful a horizon, has remained hitherto a solitary fact in medicine. Born of a happy observation, marvellously developed by a genius as patient as it was penetrating, it was at the time of its birth so far in advance of the medical science of the time that even now, after all the progress which has been made during the last seventy or eighty years, we can but suspect its real interpretation. Jenner thus demonstrated to us by one remarkable example that it is possible to protect ourselves from a mortal malady by inoculation with a trivial one; but he gave us no general method leading to the prevention of other infectious diseases.

The discovery of the power of artificially attenuating—that is, weakening—a virus does, on the contrary, furnish us with a veritable method of protective inoculation, and it is one which has given us an uninterrupted series of good results, though this invention dates from but a very few years back. Like all other recent progresses in our knowledge of virulent diseases, it found its origin in M. Pasteur's researches on ferments. In revealing to us the nature of ferments, he taught us that of the poison of infectious diseases. Like the yeast of alcoholic and the yeast of lactic fermentation, viruses are living beings—microbes, as they are now called—and, just as the development of yeast in a sugary liquid produces alcoholic fermentation, so that of microbes in the tissues of the body produces the phenomena of infectious disease. The process which has enabled us to obtain the culture of microbic ferments in a state of purity is the same which has enabled us to obtain pure cultures of microbic virus outside of the body.

The indispensable condition of success in these cultivations is that of absolute purity—that is to say, the avoidance of the introduction of other foreign germs which everywhere surround us. For this purpose we have now arranged a definite *technique*, strict but at the same time very simple. As the elements of the virus are living beings which can be kept in artificial cultivations, and as they are only distinguished from other lowly organized beings and plants by their property of invading the bodies of men and animals, the question naturally presents itself, Would it not be possible to modify them by cultivation in the same way that other plants are modified? Could they not, for example, be thus robbed of those qualities which make them formidable? To modify a virus by special modes of cultivations—such was the idea of M. Pasteur; a fruitful idea, from which have sprung those discoveries which I now propose to lay before you.

It was in studying a malady called "chicken cholera" that M. Pasteur for the first time obtained by this means an attenuated virus. This disease is so fatal to fowls, pigeons, and birds in general that it has been given the name of cholera. It is caused by the development in the bodies of those attacked of a very small microbe, shaped like a small rod with rounded ends, and almost as wide as long. The photograph projected on the screen shows us the image of a drop of blood taken from a fowl which succumbed to the natural disease. You see between the globules of the blood the little rods which are the cause of the disease. It is, however, not the blood alone in which the microbe is found; all the tissues are invaded by it. The intestines contain a great quantity, so much so that the dejecta of the sick fowls are able to spread the malady, and it is in pecking upon the contaminated ground that healthy birds are infected.

If a minute drop of blood from a fowl which has just died of the malady be introduced under the skin of a healthy fowl, the animal inoculated soon falls ill, ceases to eat, its feathers are erected, its wings hang down, and it seems oppressed with unconquerable somnolence. It soon dies, sometimes in less than twelve hours. The blood of the bird which has thus died from experimental inoculation is found to be swarming with the microbe, exactly like that of the fowls which die after natural infection. It seems, then, that chicken cholera is a contagious disease, capable of inoculation, and in which the virus is principally contained in the blood of the animals attacked by it. The culture of the microbe which is so easily accomplished in the blood of the animals can also be carried on artificially.

If with proper precautions we inoculate chicken broth slightly "alkalised," and perfectly limpid, with a drop of the blood, and if we then place the bottle in a stove at 35°C, we shall find after some hours that the broth is turbid, and that this is due to the development of the little chicken-cholera microbe. Under the microscope we shall see that each smallest drop of this *bouillon* contains an innumerable swarm of motionless microbes, like those contained in the blood which served as "seed." An infinitesimally small quantity of this first culture placed in a new bottle will give a second culture and by successive cultivations as many successive generations of our microbe as we wish for can be obtained. Each drop of these cultures, even up to the twentieth, would kill with all the signs of cholera quite as surely as the first, any fowl which was inoculated by it. This experiment affords a decisive proof that the virus of the malady is without doubt the microbe found in our cultures, and as we now know how to prepare under absolutely certain conditions as large quantities of virus the as we wish for, we have all the means at hand for the study of this disease.

If we expose at a temperature of 33°C to the contact of the pure air which penetrates through the cotton wool stopper of the culture flask one of these cultivations which is so active that a drop of it would kill any fowl into whom it was inoculated and if each week we extract a small quantity of the contents of the flask and try its virulence upon healthy fowls, we observe the following changes: During the first week of the experiment all the fowls inoculated die, but after a longer time a change sets in in the degree of virulence. Not all the fowls now die when a certain quantity of this longer preserved culture is injected under their skin. Some recover after having been very ill. As time passes the strength of the virus is still more diminished, and the number of fowls which recover increases. At last, in continuing the experiment, the moment comes, say, for example, after it has remained for two months in the incubator, when this virus, at first so deadly, not only will not kill a single fowl, but causes them apparently no inconvenience whatever; and yet the virus is not dead, for it still grows in fresh nutritive substance in which it may be sown. But in this new culture none of the former virulence returns. The daughter cultures have exactly the same effect upon the fowls as the mother culture had at the time when it furnished the fresh seed. The new property of the virus, therefore, that of harmlessness for those animals for which it was formerly so fatal, can be perpetuated for successive generations. By making such cultivations we shall obtain at their respective dates a whole series of kinds of virus of diminishing activity capable of giving to the animals either a fatal malady, a dangerous malady, a serious malady, or one wholly inoffensive.

To what cause is this gradual diminution of the malady due? To the continued action of the oxygen of the air. If, instead of making the cultivation in a bottle where the renewal of the air is possible, we were to make it in a closed tube only containing a small quantity of air, the microbe would soon consume all the oxygen, and would cease to grow, for oxygen is a necessity of its development. In a tube deprived of air it cannot grow; it remains alive in it for a very long time, as one can satisfy oneself by sowing in aërated *bouillon* the small culture formed in these sealed tubes. After being preserved for a year in this sealed tube it still gives cultures which are as active as a recent culture from the blood of a fowl just dead of chicken cholera.

We see, therefore, that the diminution in virulence which takes place in those cultures exposed to the air is dependent on that exposure, and not on the length of time the microbe is kept.

Gentlemen, what results were won, what new ideas gained by this single experiment on the culture of the microbe of chicken cholera? By it M. Pasteur showed us that the viruses of infectious diseases are no more the unchangeable entities they were before imagined to be. He taught us that, like all other living beings, the microbic virus is susceptible of modifications which hereditry perpetuates, that it is above all the virulent character which becomes modified, and finally that this modification can be produced artificially and regulated according to the wishes of the experimenter. By this experiment M. Pasteur established the attenuating influence which the air possesses; at the same time he explained how it is that the activity of a virus, under natural conditions as seen in epidemics, is preserved or exhausted, and how the same malady may be sometimes malignant, sometimes light.

We have seen how fowls inoculated with attenuated cholera verus, suitably chosen, took the light form of the malady and soon recovered. If, now, you inoculate these recovered fowls with blood from a fowl dead of the virulent disease and at the same time you inoculate a number of fresh fowls you will find that all the fresh fowls will die while those previously inoculated with attenuated virus will resist the disease. They will merely have a passing illness, which soon disappears. The inoculation with the attenuated virus has rendered them exempt from the fatal form of the disease; it has given them immunity; and, if in the same animals, you make successive inoculations of increasing intensity, you will make them refractory to cholera to such an extent that you may imoculate them with the most virulent blood, under conditions where they would be exposed to the most intense natural contagion, and they will not experience the least inconvenience from it, and it will be impossible to kill them by this illness, which was formerly so formidable.

The attenuated virus therefore discovered by M. Pasteur is quite as efficacious against chicken cholera as Jenner's vaccination against small-pox. But while we are ignorant of the relations between small-pox and vaccine, none of the relations between the vaccine virus of fowl cholera and the virulent virus are hidden from us.

This plan, moreover, is not only successful in the case of chicken cholera, but constitutes a definite method of attenuation of virus, the value of which has been proved by the production through its means of the vaccine of anothor malady more interesting than fowl cholera, as it is both a scourge for cattle and can also be transmitted to man. I mean splenic fever, anthrax, or charbon, for it is by the regulated action of heat and air upon the anthrax virus that the vaccine of this malady has been obtained; but in the case of anthrax a difficulty arose which was not present in that of chicken cholera.

The anthrax virus is found in the blood of animals which have just died of the disease. Culti-

vated in veal broth slightly alkaline it forms a culture resembling cotton down swimming in a clear liquid. This down is formed by long and interwoven filaments, as you see them in the photograph. In the interior of these filaments, after some hours, you see bright spots beginning to appear, the outline of which become more and more distinct. These brilliant spots are the germs or spores of the bacillus discovered by M. Koch; these spores are the veritable seeds of the microbes, and as grains of corn, for example, offer more resistance to heat and dryness than does the growing corn, so the pores can bear without perishing a temperature of 90° C., and the action of a number of agents which would kill the bacteride in its filament stage. The spore is thus the resistant condition of the microbe of anthrax, and whenever it finds conditions favorable to germinating, either in the body of an animal or in some artificial nutritive culture, it will give forth filaments, and these in their turn will produce new germs.

If we expose the anthrax bacillus to a temperature of 38°C and the contact of the air, as we did the microbe of fowl cholera, its virulence will not diminish. Even at the end of a long period it would still kill all the men and animals into whom it was inoculated. It consequently appears that the oxygen of the air is in this case unable to exert its attenuating influence, because the spores which are formed during the first hours of the culture are able to resist its action. In order, therefore, to repeat the conditions analogous to those which were successful in the chicken cholera, we must first prevent the bacilli from producing spores. The way to do this is by cultivating anthrax not now at a temperature of 35°, but of 42° to 43°C. Under these conditions the bacilli develop, producing the filaments but no spores If we try every three days, for example the intensity of the virulence of a culture thus made at a high temperature, and in which no spores are formed, by inoculating it into sheep and rabbits, we shall find that in the first days of the experiment all the inoculated animals succumb; then that the virus becomes less active, and the sheep resist, while the rabbits still die, though after illness more and more prolonged. After a still longer period the culture made at 42° loses its danger for the rabbit, but is still fatal to guinea pigs and to mice. Finally the moment arrives when it is quite harmless even to these little rodents, very sensitive to the anthrax virus as they are. We here see, as with fowl cholera, the virus passing through all the stages of decreasing virulence and finally becoming harmless. The bacilli, which at a high temperature give off no germs, yet form them rapidly if cultivated at 30° or 35° C., and the spores which are then produced preserve the same degree of virulence as the filaments from which they were derived. It is, therefore, only necessary to draw off each day a little of the culture from the bottle at 42°, and to place it in *bouillon* at 85° C., in order to have a series of cultures of graduated virulence and furnished with spores capable of fixing each of these special degrees of intensity. The sheep and oxen which receive these attenuated bacterides exhibit a passing fever, but if, later on, you inoculate them with virulent virus, it has no effect upon them. One has, therefore, only to choose among the degrees in this scale of virulence that which will give to the animal one is desirous of protecting from anthrax an illness slight but sufficient to ensure the desired exemption. In practice the vaccinations of oxen and sheep are done twice. The virus of the first inoculation is very attenuated, and is intended to prepare the animal for the action of the second and more energetic inoculation, which is prepared twelve days after the first. The whole difficulty in anthrax inoculation consists in the choice of these two viruses, and in keeping the relation between their degrees of virulence invariable. Everyone still has in his rememberance the striking demonstration of the efficacy of these preventive inoculations given at Pouilly-le-Fort in 1881. Five and-twenty sheep, chosen promiscuously from among fifty, were inoculated with attenuated virus of anthrax, and afterwards with the virulent virus at the same time that twenty-five other fresh ones were inoculated as a control experiment. The twenty-five vaccinated sheep remained healthy; the twenty-five control sheep died of anthrax. Demonstrative as this experiment was, it did not obviate violent attacks, the first of which was against the principle of the method.

The possibility of obtaining attenuation of the anthrax virus under the conditions laid down by M. Pasteur was denied. It is, however, unnecessary to dwell upon this point, as it is admitted even by those who contested it, for example, Koch and others; and the attenuation of the bacilli cultivated at 42°C. has become a classical fact. The answer to lay criticism is to be found in these tables, which give the number of animals inoculated in France since 1881.

TABLE I.—*Animals Vaccinated against Anthrax.*

Years.	Sheep.	Oxen.	Mortality among Sheep.
1882	243,199	22,916	1.08 per cent.
1883	193,119	20,501	0.77 "
1884	231,693	22,616	0.97 "
1885	280,107	21,073	0.90 "
1886	202,064	22,113	0.75 "
1887	293,572	42,538	
1888	269,599	34,464	

The mortality among sheep before the preventive vaccination for anthrax was ten per cent.;

since that period it has fallen to less than one per cent.

It shows how firmly established these inoculations are in agricultural practice, while the rise in their number is the most convincing proof of their efficacy. The farmer, of course, cares nothing for scientific discussions. For him, preventive vaccination is judged entirely from the standard of profit and loss; and in eight years he has had ample opportunity of coming to a definite conclusion on this point. The mortality among sheep in the anthrax districts has gone down from ten per cent. to one per cent. Insurance companies insert a clause in their agreements making preventive inoculations of the insured cattle obligatory; and in Austria, Italy and Spain the vaccinations are beginning to be widely adopted. What better arguments could be adduced to prove the great service which the discovery has rendered to agriculture? But I do not desire to dwell on this point, and will proceed, having already discussed the attenuation of the virus, to consider the fact of its return once more to the virulent condition.

If in Nature we were to come across one of these attenuated bacteria which we have learnt to prepare, and which are so harmless as to be incapable even of killing a mouse, it would clearly be impossible for us to recognise in this inoffensive microscopical object a descendant of the terrible bacillus anthracis. To do so it would be necessary to have watched it in its stages of gradual attenuation. It is, however, possible (always supposing that the process of attenuation has not been carried too far) to make the bacillus reascend the steps of virulence down which it has come, and so to render it once more virulent.

We have stated that it was not capable even of killing adult mice; but let us inoculate with it a very young mouse, only one day old. This young mouse will be much more sensitive to the action of the virus than the grown up one would be, and it will die in a few days. In developing itself in this young mouse, the bacillus will have recovered a portion of its old fitness for life in living surroundings; and the blood of this first mouse introduced into that of one a little older will cause its death, and thus proceeding step by step from the youngest mouse to the oldest, it will gain power to kill first old mice, then guinea pigs, rabbits, sheep, and last of all, oxen, which are among herbivorous animals the most callous to the action of anthrax.

Thus we see that we can increase the virulence as easily as we can diminish it; and that it manifests itself by the increasing power of the microbes to germinate in the bodies of living animals, a power which can thus be either acquired or lost under respectively appropriate conditions. That this increase of virulence which we have thus excited is going on in Nature we can well imagine; and that a microbe, at first harmless for a particular kind of animal, should afterwards become dangerous to it. Given that some fortuitous circumstance should have introduced it into an animal with but feeble power of resistance, and it will grow there. This first cultivation will adapt it to parasitic life; it will pass out ready to develop in an organism in which it could not previously have gained a foothold, and after several such passages it will become really formidable.

There is no rashness in believing that by such means, in the course of ages new forms of virulence have been evolved, and that these experiments on the variation of virulence throw a flood of light on that most obscure of questions, the origin of new virulent diseases. For these results also explain how one and the same kind of microbe can produce such diverse morbid effects; how, in its active or virulent state, it causes a general disease, rapidly ending in death, and in its passive or attenuated condition produces nothing more than a special local lesion.

Other viruses have also been attenuated by this method of the action of the air upon the cultures. At the Congress held in Geneva in 1882, M. Pasteur cited a whole series of fresh examples. I shall, however, only speak to you of the attenuated virus of a special form of swine fever, a disease much dreaded by farmers, and known in France by the name of "*rouget*,"* as the sick animals are distinguished before death by red patches on the skin.—M. Roux in *Br. Med. Jour.*

(*To be continued.*)

CLINICAL SIGNIFICANCE OF COLORLESS STOOLS.

At the recent meeting of the Royal Medical and Chirurgical Society a paper, by Dr. T. J. Walker, was read by Dr. Andrew Clark, as to the "Clinical Significance of Colorless, or Clay-colored Stools unaccompanied by Jaundice, their Connection with Disease of the Pancreas, and on the Part played by the Pancreas in eliminating Bile from the Intestines" (*Lancet*, March 30th, 1889.) After referring to the accepted views of the significance of clay-colored stools, the author gave particulars of two cases in which, during life, a persistent symptom was the absence of color in the fæces, and in which the diagnosis made of obstruction of the pancreatic duct, with a healthy condition of the bile-duct, was confirmed by the necropsy. From these cases he concluded: 1. That the formation of hydrobilirubin, the coloring-matter of the fæces, depended on the mutual reaction of the bile and

* This form is known in Ireland as "red soldier," and is not the same disease as the pneumono-enteritis called "swine fever" in this country.—*Tr.*

pancreatic fluid, under the influences met with in the intestinal tract. 2. That in disease a deficiency of pancreatic fluid would, equally with a deficiency of bile, cause the pathological condition of colorless or clay-colored stools. 3. That since, according to the most recent physiological researches, that portion only of the colored constituents of the bile which have been converted into hydrobilirubin was excreted in the fæces, while the unchanged bilirubin, bilifuscin, and biliverdin were absorbed, it followed that if hydrobilirubin could not be produced without the aid of the pancreas, that organ must have an important *rôle* in regulating what proportion of the bile entering the intestines should be absorbed and what thrown off in the fæces. Dr. Walker then pointed out that these conclusions received confirmation from the records of other published cases, that Claude Bernard recognized that the pancreas had a part in causing the color of the fæces, and that the state in which the bile pigments were found in the meconium of the fœtus, while the pancreatic function was in abeyance, also accorded with these conclusions. He further pointed out that the fact of the pancreas influencing the excretion of the bile in the fæces would, if accepted, reconcile the discrepancy between the clinical observation that certain drugs produced copious bilious stools, and the physiological observation that these drugs had little or no influence on the secretion of bile by the liver; and that the same fact would explain those hitherto inexplicable cases in which, with no evidence of arrest of the bile-secreting functions of the liver, or of obstruction of its ducts, the symptom of white or clay-colored stools was persistently present. In conclusion, Dr. Walker indicated the practical importance of the views he had endeavoured to establish in the treatment and diagnosis of pancreatic disease and of all forms of bilious disorder.

Dr. George Harley said that the paper required serious consideration, many points in it referring to matters proved, and many to others still doubtful. He quoted several instances which seemed to him to militate against the views as to the action of the pancreas which Dr. Walker had put forward. The meconium of children was only white in those cases in which the bile-duct is occluded; and in cases where a motion half black and half white was passed at the end of an attack of jaundice, the white part would be passed when the bile-duct was blocked, and the black part when it was patent, but the pancreas would be acting in both cases. White stools ought not to be so common as they were if Dr. Walker's views were correct.

Dr. Thudichum acknowledged the instructiveness of the clinical cases, but thought the conclusions drawn were false. How was it proved that bile was eliminated from the intestine? Had bile been found in the fæces? Only a very small quantity of cholic acid had been discovered in the excrement of the dog, not one-twentieth of the whole secretion. Opium would produce colorless fæces, and the same thing occurred previous to an attack of epilepsy in a child; in these cases the bile-duct was not blocked. He had searched for hydrobilirubin in the fæces, and had not been able to find any. Human bile contained bilifuscin, and nothing else, and there was no proof that the pancreatic juice converted it into hydrobilirubin. So also the idea that calomel promoted a secretion of bile was false; calomel produced sulphide of suboxide of mercury, which colored the stools green. The blood never contained bile; it at once disappeared. The formulæ quoted in the paper had been all disproved; and, according to Henle, the average life of a modern physiological theory was four years; therefore no data more recent than this should be quoted as authority.

Dr. Pye-Smith saw facts in the paper which chemical criticism could not detract from. The two cases related were most instructive, and were far better interpreted by the explanation Dr. Walker had given than by any other. That complete obstruction of either of the ducts would produce white fæces was a new point. Dr. Thudichum's criticism did not touch the matter in question, for it mattered not whether the coloring-matter were hydrobilirubin or not. It might be said that there was an *a priori* improbability that pancreatic disease caused absence of the color of the fæces, because the pancreas was singularly free from disease; stone in the duct was rare, as were also abscess or cancer in the head of the gland; the occurrence of undigested fat in the fæces was likewise rare. Icterus simplex was not explained by any physiological theory, and our knowledge was so incompletely established concerning the whole matter that we could not afford to put aside any explanation attempting to account for the causation of these cases.

Mr. C. B. Keetley related the case of a man who died last year of cancer of the head of the pancreas, and who had obstruction of the pancreatic duct. The gall-bladder was enormously dilated with bile, and cholecystotomy was performed; notwithstanding this obstruction, at the necropsy the bile-duct was found quite patent. The fæces were always clay-colored, the man was jaundiced, and the urine was stained with bile throughout.

Dr. Walker, in reply, said he had dealt only with cases without jaundice, where there were pancreatic symptoms with absolute absence of liver derangement. He did not desire to dispute the question whether the brown coloring matter in the fæces were hydrobilirubin or not, and with regard to the startling announcement that bile was never to be found in the fæces or in the blood, he con-

fessed himself confused, and regretted that he could not look on these matters with the clear head of the physiological chemist. The urine, in both the cases he had related, was normal in color; normal bile was found in the gall-bladder and flowed into the duodenum.—*Therap. Gaz.*

PERSONAL DISINFECTION IN CONTAGIOUS DISEASES.

A point which appears to us of considerable value, and which has, doubtless, suggested itself to many physicians attending contagious diseases, and with almost equal certainty has seldom been acted upon, is brought again to our attention through an article published in the *Medical Record* for June 22, 1889, by Dr. L. Mervin Maus, of the United States Army. We can now scarcely deny the germ origin of such diseases as diphtheria, scarlet fever and measles, and it is further well established that the spread of these diseases is due to a material contagion, which in the case of scarlet fever, is almost confined to the desquamated particles of the epidermis. It is well established that the contagiousness of scarlet fever increases with the onset of desquamation, and it is surprising, since the contagious matter is in all probability located in these desquamated scales, that the disinfection of the skin of the patient has not become a routine practice in the treatment of this disease. Unfortunately, one of us is at present passing through an epidemic of scarlatina in his own family, and there the first thought was to endeavor to protect the other members of the family by a disinfection of the skin of the patient, employing the use of corrosive sublimate in 1 to 1000 solution. In all probability this process was not inaugurated sufficiently soon, and did not entirely prevent the spread of the disease. It is known that very close approach to a scarlatina patient, or more or less direct personal contact with the patient, is required for the spread of the disease. If we could only thoroughly disinfect all the surroundings of the patient, we might hope, then, to do away with the spread of the disease, besides greatly reducing the necessity for prolonged isolation. Dr. Maus publishes the following rules as a preventive measure for the extension of this disease, and states that his practice has been founded on personal experience, and so far has been entirely satisfactory. He even states that he believes we can through the employment of this method of treatment ignore isolation, in cases of mild scarlet fever, and ordinarily permit patients to join the family circle in ten days or two weeks.

1. Sponge the patient thoroughly morning and evening with a tepid solution of corrosive sublimate, 4 to 1000, as soon as the eruption makes its appearance.

2. Wash the hair once daily with a solution of the corrosive sublimate, of the same strength, and also a solution of borax, 1 to 250.

3. Disinfect the urine, fæces and expectoration, also the discharge from the ears and nose, if there be any. A solution of the bichloride, 1 to 1000, is best for this purpose.

4. As soon as the patient is permitted to leave the bed have the body washed with warm water and soap, then sponged with the 1 to 4000 bichloride solution, wiped dry, and anointed with the following ointment:

℞ Sodii biboratis,
Zinci oxidi, - - - - - - aa ℥iv;
Ol. gaultheriæ, - - - - - - ℥ss:
Vaselini, - - - - - - - - ℥iv.

The hair should be thoroughly washed with the bichloride and borax solution.

5. The patient is then to be enveloped in fresh and clean clothes throughout, and allowed to leave the sick-room if his condition otherwise admits of it.

6. The bed-linen, soiled clothes, towels, etc., should be placed in a suitable sublimate solution and boiled, and the rooms well disinfected with sulphur. The sulphur candles are very convenient, and the disinfection should be repeated the second day, as the germs are very tenacious of life.

7. Require the nurse or attendant to keep the hair, face and hands well disinfected during attendance, and to likewise make a complete change in his or her garments on date of the disinfection of the sick-room.

8. Continue the provisions of the third and fourth rules once daily until desquamation is complete.—*Therap. Gazette.*

MEDICAL NOTES.

For a case of *chorea* in a child 13 years of age, Dr. Rex ordered 5 grs. antipyrine, t. d.

In *laceration of the perineum*, either operate within 16 hours, or else two months after labor. (Prof. Parvin.)

For a case of *facial paralysis* (Bell's Palsy) of two months' duration, Prof. DaCosta directed 20 grs. potassium iodide, t. d.; the dose to be increasd gradually.

As a rule, avoid stimulus in *pneumonia*, except in cases of drunkards, or where the process has reached the third stage, gray hepatization. (Prof. DaCosta.)

As a tonic treatment for *syphilis*, Prof. Gross advised the following:—

℞.—Hydrarg. chlorid. corrosiv., gr. $\frac{1}{12}$
Tinct. ferri chlorid. . . gtt. xxv. M.
Sig.—t. d.

Functional cardiac murmurs sometimes are heard at the apex, instead of their usual situation over the pulmonary area, but are not transmitted to the axilla, as organic murmurs are always. (Prof. Da Costa.)

In the treatment of *gastric dilatation*, Prof. Da Costa advises washing out the stomach every few days, as much as possible a dry diet, the use of bitter tonics as gentian, strychnia, nux vomica and carbolic acid, or thymol after meals to prevent fermentation.

Treat *cervical leucorrhœa* by applications of iodine (Churchill's tinct.), carbolic acid or a saturated solution of persulphate of iron, in conjunction with hot water injections and tampons of boracic acid and glycerine. (Prof. Parvin.)

In a case of *hysterical sighing*, of 12 months' duration, occurring every few minutes, but never at night, Prof. Da Costa directed 3 drops of Fowler's solution, t. d., and—

℞.—Hyoscin. hydrobromat. . . . gr. $\frac{1}{100}$.
Sig.—Morning and evening.

In the case of a man æt. 28, a dyer in a carpet dyeing factory, who had *epileptic fits* since his 17th year, and the urine containing lead, Prof. Da Costa directed 30 grains of potassium iodide, t. d., and 20 grains of potassium bromide morning and evening.

Treat an *acute ulcer* by putting the patient in the recumbent position, elevate and relax the limb, paint the surrounding tissue with tinct. iodine, diluted one-half with alcohol, and apply the following solution (diluted one-half by hot water) on lint over the ulcer, t. d. :—

℞.—Plumbi acetat., ... ℥ij
Tinct. opii, ... f℥j
Aquæ destillat., ... f℥vij. M.
(Prof. Gross.)

Coll. and Clin. Rec.

RIGORS: WHAT THEY INDICATE.—In a paper upon this subject in the *London Lancet*, Mr. W. Gilchrist Burnie reports three illustrative cases and points out a few diseases that rigors may indicate other than those that are commonly regarded as following them.

The first case given was that of a man, age fifty-six years, with good family history. His health was good until within the last few years, during which he suffered from stricture of the œsophagus. When Mr. Burnie was called he found the patient suffering from hemiplegia, from which he made an apparent complete recovery at the end of two months, an attack each of syphilis and gout having retarded the case. The patient, however, continued to be apathetic, had no desire to get out of bed, and soon began to complain of a chilliness and pain in the region of the liver. Mr. Burnie was summoned, and he found the patient in a violent rigor, and with a temperature of 107° F. He conto have one or two of these rigors daily for about six weeks, at the end of which time he died. The most interesting feature of this case is that a post mortem showed that the patient died of melanosis, and no pus was found in any part of the body. The liver was the principal organ involved, being black throughout, solid and somewhat enlarged, and on microscopical examination presenting nothing but cancer cells and pigment granules, no liver cells being seen.

Another point of interest was that although the patient had suffered from a recent attack of purulent catarrh of the bladder, that organ was found perfectly healthy. The second case given was that of a well-nourished young man, who after suffering for a day from general malaise, had a violent rigor, which was followed by a severe pain in the region of the gall-duct. Violent frontal headache and severe pain in the region of the liver continued for two weeks; there was a nightly elevation of the temperature accompanied by violent rigors, followed by profuse sweats. At the end of this time a history of syphilis was obtained and the patient was put upon iodide of potassium and he made a rapid recovery. Four years later syphilitic brain disease appeared, which caused his death. In this case when the rigors occurred abdominal abscess was regarded as the most probable cause of them.

The third case given was that of a primipara who a week after delivery began to have one or two rigors daily. Mr. Burnie observed that when the patient remained in the second story of her house, she improved rapidly and the rigors ceased, but each time she returned to the first floor the rigors were repeated. A decided odor of sewer-gas led to the discovery of an open connection between the lower room and the sewer. The patient was sent to the country, and she rapidly recovered. —*Weekly Med. Rec.*

CARLYLE ON MEDICAL MEN.—In the recently published letters of Mrs. Carlyle there is a sentence in one of her husband's which it will be interesting to medical men to read. Coleridge, the poet, worn down by intellectual strain and the pernicious habit of indulging in opium, wellnigh penniless, neglected by friends and former patrons, was received into the family of Mr. Gilman, No. 3, The Grove, Highgate, a medical practitioner of considerable local repute, in whose family he lived for eighteen years, and was much esteemed. "Poor Coleridge died on Friday," writes Carlyle; "he had been sick and decaying for years, was well waited on, and, one may hope, prepared to die. Carriages in long files, as I hear, were rushing all round Highgate when the old man lay near to die.

Foolish carriages! Not one of them would roll near him (except to splash him with their mud) while he lived; *had it not been for the noble-mindedness of Gilman, the Highgate Apothecary, he might have died twenty years ago in a hospital or in a ditch.*" Distracted in mind, weakened in body, and impecunious—

"O! who can tell what days, what nights he spent
Of tideless, waveless, sailless, shoreless woe!"

Estranged from former social enjoyments and neglected by friends, he found in Mr. Gilman's family a haven of rest, such as Cowper, the poet, had found in the family of Dr. Cotton, at St. Albans, under similar circumstances. These instances tend to rivet the attention to the beneficence of the profession, and reflect what in a minor degree may be found in every district of the country. Medical men are thought to be hardened by the suffering their daily vocation obliges them to witness, but it is not so. Authors, artists, literary men of every kind and degree, widows, and orphans, as well as the poorer portions of the community, could tell how the practice of the medical profession tends, as Watson says, "to temper the feelings and touch the heart."—*Med. Age.*

INFANTILE DIARRHŒA.—The medical treatment is divided to meet the demands of three sets of cases.

1st. Those with vomiting, colic, convulsions, frequent greenish stools and great exhaustion. At the onset give a tablespoonful of the following mixture:

℞.—Ol. ricini . . . . . ℥j.
Glycerin . . . . . ʒij.
Ol. cassiæ . . . . . gtt. i.

After it has operated freely, give some antiseptic combined with a small dose of opium. Salicylate of sodium is perhaps the best. For a child two years old the correct formula will be:

℞.—Sodii salicylatis . . . . . grs. iv.
Tr. opii. deod. . . . . gtts. x.
Syr. simp. . . . . ʒ j.
M.—Sig. One tea spoonful every three hours.

The result is rapid and satisfactory.

2nd. The diarrhœa may be tolerably frequent and of a vivid grass green color, but unattended by vomiting and marked prostration. This variety is rapidly cured by lactic acid. A two per cent. solution may be given in doses of one teaspoonful every one or two hours.

3rd. This type is commonly insidious in origin; the stools being softer and more frequent than usual for a long time before the onset of alarming symptoms; or it is engrafted on a pre-existing cholera infantum. Fully developed, the stools are green or pale in color, moderately thin, and containing sago-like pellets of mucous with here and and there specks and streaks of blood. Later on we find shreds and strings of mucus-like substance, apparently caused by sloughing from superficial ulcers of the colon. Examine carefully into the sanitary surroundings of the patient, and eliminate all errors in diet. A moderate dose of castor oil will remove all irritating matter from the intestine. Then a small dose of opium and bismuth subnitrate will quiet the nervous system and soothe the intestinal mucous membrane. As soon as the number of the stools are reduced to a moderate number, small doses of Fowler's solution of arsenic may be added, and the opium gradually discontinued. Bloody stools are frequently corrected by injections of nitrate of silver, one grain to the pint, at intervals of twelve to twenty hours. When convalescence is established a sojourn to the seaside is advisable.—*New Eng. Med. Monthly.*

PSORIASIS AND ITS TREATMENT. — Psoriasis rarely attacks the skin of the palms of the hands or the soles of the feet, and Dr. Bulkley has never seen it on the tongue, although it has formed over 43 per cent. of all cases of skin diseases which have come under his observation. The cause seems frequently due to change of temperature with much moisture. Between 10 and 15 years of age the female patients were double the number of males, while between 15 and 25 years of age the reverse was true. Over 40 per cent. occur before the second decade of life, and the youngest patient was a little over a year old. Over one-third of all his patients had the disease for ten years or over. The longer the disease lasts the less it is benefited by treatment. The disease is not self-limited. It is most curable in children, and less in patients between 20 and 25 years of age. Psoriasis is a constitutional disease and akin to rheumatism and gout. Meat eating increases its severity, and stimulants precipitate an attack. Oils and fats favor a cure, and wool should always be worn next the skin to avoid sudden changes of temperature, and patients should live in a warm climate. Arsenic, alkalies, and sulphur water are the best medicines to use internally. Local applications are beneficial, especially if applied early, and the white precipitate ointment seems to act better than any other. He has given up the use of chrysophanic acid in in private practice.—Dr. Bulkley in *Med. and Surg. Rep.*

THE BACILLUS OF TETANUS.—Tizzoni and Cattani (*Wiener Med. Presse*) have succeeded in obtaining pure cultures of the tetanus bacillus of Nicolaier-Rosenbach. A patient who had sustained a compound fracture of the arm was brought to the hospital, and developed tetanus. Amputation was performed but failed to save the patient. His blood was repeatedly examined during life,

but no micro-organisms were found and inoculations with it in animals proved negative. Cultivtions of matter taken from the surface of the wound, however, furnished three varieties of microbes, from which the characteristic bristle-bacillus was separated in pure cultures.

At the late Congress of the German Surgical Society, Kitasato detailed some experiments with this bacillus, and exhibited pure cultures. His method of separating it from the other bacteria with which it is generally associated, consists in exposing it to the action of a high temperature (80° C.) This destroys the other organisms, but leaves the spores of the tetanus microbe intact, if the heat is not too long continued. The spores are cultivated in proper media and pure cultures thus obtained. Inoculations of mice produced tetanus, and reinoculations do not seem to diminish the virulence of the microbe.—*Internat. Journal of Surgery.*

ŒDEMA AS A DIAGNOSTIC SIGN IN CARCINOMA OF THE STOMACH.—Dr. C. Baert, of Brussels, writing in *La Clinique* on cancer of the stomach, calls attention to the frequency with which œdema of the ankles is met with in this affection after it has lasted a few months—a diagnostic aid which is by no means new, but is, he thinks, in danger of being too much overlooked at the present day. He gives a number of cases recently occurring in the various hospitals in Brussels in which œdema was present. In one of these cases the œdema came on as early as three months after the first symptoms of the affection made their appearance; in two other cases it was noticed after four months; but in most of the other instances it was delayed till the lapse of from six months to a year after the onset. In one case, where there was no evident cause to which to attribute the loss of appetite and the wasting complained of by the patient, Professor Carpentier, noticing some œdema of the ankle, diagnosed carcinoma of the stomach, and found his diagnosis confirmed by the appearance a month afterward of all the usual signs of the affection. Several of the cases presented a marked increase in the nitrogen excreted in the urine. With regard to the deficiency or absence of hydrochloric acid in the stomach in cancer of that organ, M. Baert admits that it is usual, but agrees with Wolff and Ewald in saying that this sign is by no means peculiar to cancer, as it is found in other gastric affections.—*Lancet.*

EFFECTS OF PROLONGED CHLOROFORM ANÆSTHESIA.—Some observations made about two years ago by Dr. Ungar pointed to fatty degeneration of the heart and liver as the cause of death after repeated prolonged administration of chloroform. Further experiments on dogs have recently been made by Dr. Strassman, which appear to confirm this view. Dr. Strassman found that the first organ to be affected was the liver, then the heart, and after that other viscera. The nature of the morbid change was not a fatty degeneration, but fatty infiltration. The actual cause of death in fatal cases appeared to be the cardiac affection, as in all such a very marked degree of change was found in the heart. In non-fatal cases the morbid change was found to have disappeared in a few weeks' time. When morphia was given previously to the chloroform, less of the latter was required, and consequently the changes produced were not so considerable as when the ordinary amonnt was given. Animals suffering from hunger, loss of blood, etc., were especially predisposed to the morbid changes due to chloroform.—*Lancet.*

INFLUENCE OF THE AGE OF PARENTS UPON THE VITALITY OF THEIR OFFSPRING.—Recently before the Hungarian Academy of Sciences, this question was discussed by J. Korosi, Director of the Czech Bureau of Statistics. His conclusions, based upon 24,000 cases, may be briefly summed up as follows:

Parents of the same age rarely have strong offspring; on the contrary the weaknesses of both parents are apt to be transmitted.

An aged father and youthful mother of average health and constitution, usually secure strong robust children.

The mothers most likely to transmit health and strength to their offspring, are those who conceive prior to their 35th year. Mothers between 35 and 40 years give birth to children eight per cent. weaker than those whose maternal parents have not reached the former age. After 40, children are ten per cent. weaker,—and so on, in increasing ratio. Fathers under twenty years of age, invariably procure offsprings with weak constitutions.

The healthiest and strongest children are the product of fathers between 25 and 40. Any excess of age above 40 is attended with a decreasing ratio of health as to offspring, except where the tendency of transmission in the male parent is overborne by the female—*i. e.*, an old father and young mother.—*The Med. Age.*

THE LOCAL APPLICATION OF HYDRASTIS CANADENSIS.—The peculiar feature of the fluid extract of hydrastis canadensis of producing vascular contraction after its internal administration has led to its internal employment in cases of chronic congestion of various organs. It is strange, however, that as yet it does not seem to have been employed as a local application in spite of the fact that pharmacological experiments with hydrastis have shown that this body is not only a local astringent, but also possesses local anæsthetic properties, a fact which led Dr. Felsenburg (*Weiner Medizinische Blatter*) to test the result of local ap-

plication of the fluid extract of the hydrastis. He states that his results have encouraged him to further experiments in this connection. His studies were made on a series of cases of chronic pharyngitis, complicated with enlarged tonsils. In all cases he states that the results were good. The local application of the fluid extract to the diseased mucous membrane showed a marked decrease in the contraction of the vessels and reduction of swelling with relief of the subjective symptoms. He states that patients readily accustom themselves to the bitter taste of this remedy, and even prefer the painting of the throat with the fluid extract to other forms of gargles or other local applications. Dr. Felsenberg thinks that perhaps a similar use of this remedy in the case of disease of other mucous membrane might lead to equally satisfactory results.—*Thera. Gaz.*

Opium in the Intestinal Hæmorrhage of Typhoid Fever.—Dr. J. A. Lindsay, of Belfast, writing on hæmorrhage from the bowel in typhoid fever, says that he has always been accustomed to follow Murchison's instructions, and has given tannic acid, laudanam, and turpentine, with ice externally and ergotin by hypodermic injections. Some good authorities prefer to omit the turpentine, but he cannot say that he has ever seen any harm resulting from its use, and its power as a hæmostatic is undoubted. In one of his cases he gave laudanam pretty freely, in spite of the presence of albumen in the urine, and with good results—no sign of narcotism appearing. He is disposed to think that in intestinal hæmorrhage, as in hæmatocele and other forms of internal bleeding, opium may be given fearlessly, and pushed even to heroic doses. Stimulants are certainly required in some cases, but must be regulated with much caution. Whilst intestinal hæmorrhage in typhoid fever is a serious symptom, it is by no means usually fatal, and prompt and decisive treatment is called for, and will often prove effectual.—*Dublin Journal of Med. Sciences.*

Exercise and Medicine. — Boerhaave, the famous physician, declared that a man was more likely to get well by climbing a tree than by drinking a decoction made of its leaves! that is, he thought exercise better than medicine. It is on this principle that the Queen of Sweden, whose nervous condition has given rise to much anxiety, is being treated. She is ordered to make her bed and sweep her room, besides taking a large amount of walking exercise. This method—the "housemaid treatment," as he calls it—has inspired a cynical journalist with some suggestions which are, perhaps, wiser than he knows He advises the "office-boy treatment," for the dyspeptic millionaire, the "groom treatment" for the Crœsus whose liver is too much with him, the "country postman treatment" for the obese financier; the "nursemaid treatment" for the hysterical woman who cannot stand a child's cry, and the "old-clothes women treatment" for the fine lady who faints at the sight of powder. Probably the "treatments" would be efficacious—if the patient would submit.—*London Hospital.*

In Fermentative Disorders of the Stomach, and in corresponding forms of diarrhœa, we consider Listerine certainly a safe, and also as a valuable preparation. It is not at all unpleasant to take when properly diluted; especially, then, as an internal antiseptic, do we recommend its use. It is, however, largely used as an external antiseptic, and its oily constituents give it a more healing and penetrating power than is possessed by a purely mineral solution. As a toilet antiseptic to use after a *post-mortem* or similar work, Listerine, with its pleasant odor, needs only to be tried to find a permanent place there. Listerine is a very attractive looking preparation, the liquid being crystal clear, with no sediment or undissolved oils whatever. The Lambert Ph. Co. have introduced their product strictly through the profession, which attests their faith in its efficiency.—*Maritime Med. News, Halifax. N. S.*

Useful Formulæ in Chronic Rheumatism.—Dr. Daniel R. Brower, in a clinical lecture on a patient suffering with chronic rheumatism, fatty heart and fatty liver, published in the *North American Practitioner*, May, 1889, suggests the following formulæ to aid in the removal of uric acid from the system, and to sustain and improve the action of the heart and of the liver:

℞ Lithiæ citrat. . . . . ℥ ij.
Strychniæ . . . . . gr. j.
Tinct. Strophanthi . . . . f ℥ iss.
Aquæ menth. pip. . . q. s. ad. f ℥ iv.
M. Sig.—Teaspoonful before each meal in water.

℞ Aloes . . . . . gr. ij.
Pulv. Ipecac. . . . . gr. j.
Pulv. Rhei,
Ferri sulph. exsiccat.,
Ext. Hyoscyami . . . . . āā gr. x.
M. Div. in capsules No. X.
Sig.—One at bed-time.

Prophylaxis of Phthisis.—Dr. J. C. Wilson, at the late meeting of the Medical Society of Pennsylvania, in the address on medicine, dealt with the above subject. He advanced the following propositions which he discussed in full, viz.:—1. Tuberculosis is a specific infectious disease. 2. The constitutional manifestations are not directly due to the bacilli, but to toxic principles evolved during their growth and multiplication. 3. Tuberculosis is directly and indirectly commnnicable

from the affected to the healthy individual. 4. It is not in the ordinary sense hereditary. 5. A rational scientific prophylaxis is practicable both as regards individuals and communities.

HYPERIDROSIS AMONG SOLDIERS.—An official circular, addressed to Prussian army surgeons respecting excessive sweating of the feet and other parts among the soldiers as an affection demanding treatment, advises the use of chromic acid as an efficient and economical application, of the strength of one part in ten of water. In cases of hyperidrosis of the feet, such a ten-per-cent. solution, applied at intervals of three, four, or six weeks, has proved sufficiently strong to remedy this source of disability. From the point of view of military hygiene, the prophylaxis of this affection is not merely a question of discomfort and inconvenience, but has its relations to the efficiency of the service, since all soldiers having hyperidrosis will be more or less prone to recurrent catarrhal troubles and to the evils attendant thereon. Hyperidrosis of the feet, moreover, will impair the marching capabilities of the men having that infirmity.

"BLACK EYE."—There is nothing to compare with the tincture or a strong infusion of capsicum annuum mixed with an equal bulk of mucilage of gum arabic and with the addition of a few drops of glycerin. This should be painted all over the bruised surface with a camel's-hair pencil and allowed to dry on, a second or third coating being applied as soon as the first is dry. If done as soon as the injury is inflicted, this treatment will invariably prevent the blackening of the bruised tissue. The same remedy has no equal in rheumatic sore or stiff neck.—*N. Y. Med. Times.*

THE TREATMENT OF DIFFERENT FORMS OF HEMIPLEGIA.—Dr. J. Hughlings Jackson, in *Brit. Medical Journal*, says: The type of syphilitic hemiplegia due to a syphilitic endarteritis is not cured by drugs. After the artery is obliterated and softening occurs drugs will do nothing toward curing the paralysis. But active treatment should nevertheless be carried on with mercuricals and iodides in order to prevent similar occlusion of other vessels. There is no doubt that some of these cases of hemiplegia do recover, but not from treatment. All cases of hemiplegia, from whatever cause, that get well, do so through the law of compensation by other nervous elements. This compensation will depend materially upon the smallness and position of the lesion.

TREATMENT OF FRACTURED PATELLA BY WIRING THE FRAGMENTS.—Dr. Ceci, at the Surgical Congress of Bologna, reported eleven cases in which he had treated fractures of the patella by subcutaneous wiring with buried sutures. The patients were for the most part between fifty and seventy-eight years of age. In nearly all the cases the fracture was simple and transverse, but in one there was comminution of the lower fragment, and in another, a man, aged sixty-nine, the bone had been broken a second time two months after the first accident. Dr. Ceci uses silver sutures. All the cases had done well, hæmatoma and non-infective arthritis having occurred only once.—*The Brit. Med. Jour.*

CHRONIC ALCOHOLISM.—In the treatment of this, Prof. Bartholow, says: For the disorders of the digestion, morning vomiting, loss of appetite, accompanied by wakefulness and nervousness, the appropriate remedies are abstinence, careful alimentation, and such tonics as quinine, nux vomica and the administration of bromide of potassium to procure quiet sleep. In the more chronic cases, where degenerative changes may be expected to have taken place, arsenic in small doses, hypophosphites and cod liver oil are recommended, and should be given for several months. Chloride of gold and sodium or corrosive sublimate will retard changes taking place in the connective tissue, if given early enough.—*Coll. and Clin. Rec.*

A CURE FOR DANDRUFF.—Dr. A. J. Harrison, of Bristol, recommends the following salve for dandruff:

Caustic potash	8 grains.
Phenic acid	24 grains.
Lanolin Cocoanut oil }	āā ʒjv—M.

This preparation should be rubbed into the scalp morning and evening. Complete cure is usually effected in one to three months.—*Le Progrés Med.*

Milk sugar in cardiac dropsy is regarded by Germain Seé as the most reliable and least harmful diuretic. He attributes the good effect of a milk diet almost exclusively to the lactose. One hundred grammes ($3\frac{1}{8}$ oz.) lactose will produce an enormous diuresis, increasing the daily discharge in twenty-four hours to two and one-half liters, and daily overreaching this, until on the third day, four to four and one-half liters are voided. Milk sugar, therefore, removes cardiac dropsy surely and rapidly, and only fails if Bright's disease complicates it. It is usually well borne and may be continued for eight or ten day or longer, with intermissions. When cardiac dyspnœa co-exists, Seé resorts to iodide of potassium.—*Times and Reg.*

MENTHOL IN ASTHMA.—Dr. Jones, *Therap. Monats*, recommends the use of a 20% solution of menthol in olive oil in asthmatic attacks.

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GRATUITOUS SERVICES TO THE POOR.

Lord Sandhurst, in his recent address to the House of Lords, in which he urged a "Parliamentary investigation into the financial and general administration of medical charities" in England, gave the following somewhat striking account of the enormous extent of medical relief afforded in the city of London. "The city contains one hundred and twenty-six institutions supported by private benevolence, whether funded or occasional. There are the eleven general hospitals with schools attached, and the eight without schools. There are the sixty-seven special hospitals. There are the twenty-six free dispensaries; the thirty-five provident dispensaries; and the thirteen which require part payment. There are the five surgical appliance societies. Together they minister to the wants of more than *a million and a half patients*, inclusive of upwards of seventy-six thousand whom in a single year they have received as inmates. Then there are the Poor Law establishments for medical relief. Eight infectious hospitals maintain two thousand seven hundred and sixty beds. Twenty-seven Poor Law infirmaries have eleven thousand nine hundred. Forty-four Poor Law dispensaries serve nearly a hundred and fifteen thousand out-patients." The *London Times* of August 1st, 1889, in criticising Lord Sandhurst's address, expresses the feeling of the general public well in its admiration of the magnitude of the work represented by the medical institutions of London. These considerations are of interest to the physicians of Canada, as affording a general indication of the great readiness with which medical men hasten to the relief of suffering humanity everywhere, and whilst we do not wish to infer that it is not the duty of the physician to relieve the suffering poor—a duty which no true physician ever declines—yet, in the interest of justice to all, may we not ask if such services by the medical profession are not *too* readily and eagerly given? Is there any profession, save the clergy, where gratuitous service is expected, and, from force of habit, often expected by those far richer in this world's goods than the physician rendering such service? We need scarcely stop to ask the reason. In large cities the dearth of clinical material is great; too great for the able demonstrator to enquire anything about the pecuniary surroundings of the patient upon whom he bestows his benefits and advice. In private practice competition is keen, and the reputation of being good and kind is a great help to the struggling practitioner.

Rich corporations do not hesitate to ask and receive the labor of the medical profession gratis. Employers of labor make the, all but gratuitous, services rendered by the medical attendant, a reason for reducing the wages of their employees, and make a direct profit out of the doctor. Sanitary boards and organizations are only too eager to bring the best professional talent to the service of the community, who, so far from expecting remuneration for their services, are glad to escape the enmity and vengeance of ignorance.

When things are changed and the doctor meets with misfortune, if he happens to lose a pauper patient by chloroform, or to have shortening or deformity after fracture, then the community cannot be too arrogant and bitter in its evidences of disfavor; the lawyer cannot be too clever in throwing aside every semblance of charity and often truth, in the prosecution of his philanthropic brother, nor the jury too ravenous to satisfy the malice of a pauper patient whom the physician merely from pity sought to serve.

It is not easy to suggest a remedy for the growing evil of free doctoring; but we call attention to the fact, that so long as doctors are willing to work for nothing, it is useless to blame those who accept their services at such a rating. We would urge the profession to remember that a doctor's

best friends are generally among his professional brethren; that a spirit of unanimity existent between neighboring physicians, a spirit which discountenances, as unprofessional and unfair such gratuities will be beneficial; and that a stern opposition to such practices, save in the cases of the absolute poor, will be to the benefit of all.

CIGARETTE SMOKING BY BOYS.

The practice of tobacco smoking has now become so general that at present few of the advocates of abstinence from the weed are heard. Temperance in this habit is assuredly necessary, for while in adults the moderate use of the narcotic seems to supply a want, apparently universal, of the human race, its abuse is attended by certain more or less constant evils. This want is evinced by the use of narcotics from the earliest times, all nations, savage, semi-savage, and civilized having employed them in various forms, for that solace which the smoker of to-day finds in his pipe or cigar. Considering the large number, of persons using tobacco, and their general health, it can hardly be said that its moderate use is harmful. Good observers have come to the conclusion that in the majority of cases, tobacco, "used in moderation and when the stomach is not empty has a beneficial effect." This, of course, applies to its use by adults. It has, in those accustomed to its use, a soothing effect upon the nervous system, but, on the other hand, it often acts as a nervous stimulant to mental work, as in reading, business, etc., the student being clearer with his pipe in his mouth and the broker mentally more active while puffing his Havana. Its action as a brain stimulant is believed to be due to the irritation of the sensory nerves of the mouth and nose, which reflexly stimulates the vaso-motor centre, and dilates the vessels of the brain, thus providing for the most complete internal respiration of the brain cells by a free supply of arterial blood to them; an effect similar to that first produced by sipping alcohol.

The difficulty is, that this like other remedies of its class, it is very liable to be abused, excess following the moderate use of the drug, when a whole train of characteristic evils follow; such as furred tongue, irritation of the throat and hoarseness, dyspepsia, irritability of the heart with a characteristic rhythm and palpitation (tobacco heart) trembling, cold clammy extremities, loss of appetite, tobacco amaurosis, sndden fainting spells, etc.

But it is upon young persons that its most baneful effects are seen. While we have above stated that its moderate use by adults is often beneficial, it cannot be too strongly urged that it is a most potent and insidious poison to the young. It is a question whether the present pernicious habit of cigarette smoking by boys is not equally of importance with the use of alcoholic liquors upon the rising generation. In this country we believe it is more harmful, inasmuch as cigarette smokers among boys outnumber spirit drinkers, largely, perhaps by twenty to one. These boys show the characteristic pallor, sickness and nervousness which result from the swallowing of nicotine. Anyone who has seen boys of from ten to sixteen or eighteen years of age, not only smoking, but inhaling the smoke of cigarettes, cannot but have seen the effects of the poison depicted not only upon their faces, but in their listless walk, delicate frame and mental lassitude. The special evils of this form of smoking are well marked. The poorest qualities of tobacco are commonly used in their manufacture, rich in nicotine rather than in the aromatic principles of the best specimens of the plant.

More or less stringent laws have been enacted to restrict the sale of tobacco to children, but we all may observe how non-effective they are. In New York a recent act by the legislature makes it a misdemeanor to sell cigarettes or any form of tobacco to persons under sixteen years of age. Pennsylvania has a similar prohibitory law. Here it is unlawful to sell to boys under fourteen years of age, without a written order from the parents. Girls of any age may purchase. It will be easily understood how boys of any age may, by clubbing their cents, obtain the desired cigarette through the agency of a boy of fourteen years of age, the purchase being divided amongst them. Just how the evil is to be met is a grave question, moral suasion being of little avail among the lower clases, who are the greatest suffers from this form of dissipation. A prohibitory law as to the manufacture of cigarettes might meet the case, for while the use of tobacco in any form is detrimental to the health of children, the use of cigarettes is un-

doubtedly at the present time the form of smoking which is most prejudicial to the health of the rising generation.

CORROSIVE CHLORIDE IN OBSTETRICS.

Great advances have been made within the last decade in every department of medicine. But to nothing are we more indebted for practical utility, or for accomplishing important results, than to antiseptics. Their utility had to a limited extent been known prior to Lister's successful experiments of their value in surgical practice, but since Koch's researches and discovery of specific germs of disease, antiseptics have obtained a more extended utility, and proved almost as valuable in obstetrics as in surgery proper. The once dreaded puerperal fever or peritonitis, the terror of both hospital and private obstetrical practice, of the physician and the patient, is no longer the *bête-noir* of the accoucheur, but is now clearly understood, and almost wholly amenable to antiseptic treatment.

The history of the successful employment of corrosive chloride in a large lying-in hospital in Berlin, from May, 1884, to the end of 1887, proves conclusively that, both as a preventive and remedial agent, it is unequalled, and that it has reduced the dangers of septicemia in obstetrics to a minimum. During this period of over two and a-half years, 5,027 confinements were treated antiseptically with sublimate solution, with the gratifying result of reducing the number of cases of puerperal fever from 2½ to 3 per cent., which obtained previous to 1884, to from .02 to .03 per cent. during the exhibition ef corrosive chloride.

The routine treatment, after being put to bed, was to wash the external genitals and syringe out the vagina with a solution, 1 to 4000, which was repeated every two or three hours. The hands of the attendants were disinfected by a 1 to 1000 solution. After delivery, the parts were again washed and syringed with 1 to 4000 solution. Subsequently vaginal injections were dispensed with unless by special order of the physician, but washing the external genitals was continued twice a day.

As to the danger of such treatment, during 1884 the injections were made 1 to 1000 in strength, and no bad effects followed, but from reports from other places of poisonous effects from so strong a solution, they were reduced to 1 to 3000, and afterwards to 1 to 4000, with equally good effects; and now, for uterine injections, 1 to 5000 are used, and in *post-partum* hæmorrhages, 1 to 8000. When the stronger solutions were used a few mild cases of mercuric symptoms were observed, which soon subsided. Intra-uterine injections is used in 453 cases, as strong in some cases as 1 to 1000, but mostly 1 to 4000, in which but few cases evinced any symptoms of mercuric poisoning, of mixed type. In 368 cases the uterus was thoroughly syringed out, which were followed by 10 cases of intoxication, and one had a fatal termination. These records are evidence of the greater danger of intra-uterine injections, and of the necessity of avoiding such injections as far as possible. Yet these results should not deter us from employing them when clearly indicated.

We therefore conclude from the above, and the reports from other lying-in hospitals, that corrosive chloride not stronger than 1 to 4000, should be used in all cases of labor, and especially where the sanitary environment is at all unfavorable.

THE USE OF PESSARIES.—The numerous objections to the use of pessaries which have recently been so strongly urged, seem to have become rooted in the minds of a majority of the profession. Perhaps the pendulum of professional fashion has swung rather too far in this matter. At the Soc. de Chirurg. lately, Dr. Bouilly (*Jour. Am. Med. Assoc.*) defended their use, endeavoring to prove that they are not dangerous. He "would not, of course, defend the employment of those enormous pessaries that were formerly in use, but he would willingly adopt instruments, whether malleable or not, which are made to measure, and which adapt themselves to the parts to which they are applied, such, for instance, the pessaries of Hodge and of Smith. Dr. Bouilly thinks that they are clearly useful in simple, mobile, retro-deviations, and that it would be dangerous not to maintain the uterus in position. Between doing nothing on the one hand, or practicing Alexander's operation on the other, which does not often produce satisfactory results, there is a treatment to institute, and that is of the application of a pessary. Dr. Bouilly had already collected 84 cases of retro-deviation in which he em-

ployed this instrument and which always proved satisfactory. But to apply the pessary, reduction must first be effected, either by the genu-pectoral or knee-and-chest position, or by the method of Schultze. In these conditions an instrument of good dimensions re-establishes the cul de-sac of Douglas, the portion of intestine that was displaced will resume its normal position, and in directing the attention of the patient to the necessity of not allowing the bladder to get full, of avoiding shocks, pregnancy may take place, or the maintenance of the uterus in proper position may be obtained in eight or nine months of treatment. The danger is *nil* when the pessary is well applied, and accidents may occur only in cases where the instrument is too large, ill-chosen and badly applied to a womb imperfectly reduced. Only once did M. Bouilly see an ulceration in the posterior cul-de-sac, and it was healed up in a few days. It is, of course, understood that the posterior adhesions are a contra-indication.

DR. BROWN-SEQUARD'S REJUVENATION DISCOVERY.—The *Med. Press* reports that at the last meeting of the Société de Biologie, of Paris, Dr. Brown-Séquard said that concerning the "wonderful results" he had obtained from the injection of the liquid from trituration of the testicles of young animals, he could but confirm what he had already alleged. Although he had suspended the injections, he felt himself vigorous, and he had recently made two voyages without the slightest fatigue. He suggested that women could have their vital forces recuperated by injection of a liquid derived from trituration of ovaries! In any case the method of M. Brown-Séquard is not new. Horace, in one of his odes, beseeches the witch Canidia to reveal to him the secret of the draught which she prepared at night by crushing in a mortar pieces of flesh torn from the most fiery horses of Rome, and the patricians, says the Latin poet, used this mysterious liquid with great confidence. Consequently, M. Séquard is but an humble successor of Canidia!

SALE OF TUBERCULOUS FLESH AND MILK.—At a recent meeting of the Scottish Veterinary Society, held in Edinburgh, a motion was submitted by Prof. Williams as follows: "That the Society, thoroughly believing that tuberculosis is a contagious disease, urge upon the Government—first, to stop the sale of milk from animals suspected of being infected; secondly, to suppress the consumption of meat from tubercular animals; and, thirdly, to give compensation for a limited number of years." It was held as an unanimous opinion, as shown by the discussion which followed, that all visibly diseased meats should be destroyed, and that milk from diseased animals is especially dangerous.

OPERATIVE TREATMENT FOR PROSTATIC HYPERTROPHY.—Prof. Kümmel, of Hamburg, in a paper lately read before the Congress of the German Society of Surgery (*Med. News*) stated that he had performed on six patients a partial extirpation of the hypertrophied prostate gland. His cases were very grave, as they had resisted all other methods of treatment. There was fever, bronchitis, and considerable vesicular dilatation. In such cases the operation is indicated, while it is the contrary when the kidneys are seriously involved, or when there is a complete paralysis of the bladder. In this last case the operation is useless, for even after the suppression of the obstacle, spontaneous micturition cannot be re-established. To extirpate the prostate gland he performs superior cystotomy; the bladder is very carefully washed out, and he then destroys, by the aid of the thermo-cautery, not only the median lobe, but also all the parts of the gland which project into the bladder. He then sutures the bladder, and allows Nélaton's sound to remain in it. Out of six patients, one died from collapse, in another the operative result was negative, four are cured and can urinate spontaneously. In the discussion that followed, Prof, Socin, of Bâle, said he believed the enlarged prostate was not so often accountable for the evil symptoms observed, as is the cystitis, which is so frequent a concomitant. He thought that the good results which sometimes follow extirpation of the prostate gland, are due, probably, more to the washing out of the bladder and to the sound left in position—that is, to the treatment of the cystitis—than to the operation itself. The cystitis is the first enemy to combat in the treatment of prostatic enlargement.

TREATMENT OF VARIOUS FORMS OF RHEUMATISM.—Dr, McColl, *Lancet*, gives the following regarding the salicylic treatment of rheumatism.

1. In relieving pain and lessening fever in acute rheumatism the salicylic treatment is most undoubtedly the most effective we know of. 2. The salicylates do not prevent the rare complications of hyperpyrexia, and are absolutely useless in its treatment. 3. It is doubtful if they prevent endocardial or pericardial troubles, the percentage remaining about the same (50 per cent.) since the salicylic treatment as before. They seem to have no influence in curing these troubles when they do occur. 4. There is no proof that the salicylates prevent relapse. 5. It is not proved that the salicylates lessen the duration of the disease, or that they prevent anæmia. With regard to the particular form of the remedy, most writers recommend (and Dr. McColl agrees with them) salicylate of soda in twenty-grain doses, at first every hour for three or four hours according to circumstances. It should be continued in diminished doses for at least eight or ten days after all pain and pyrexia have gone, and in most cases should be followed by iron. Salicylic acid, salicin and salol might be tried in exceptional cases where the soda salt was not well borne. In young children antipyrin might be substituted with advantage. In convalescence, Sir A. Garrod's alkaline mixture, followed by iron, is advised; and, if any joint remained stiff or swollen, blistering or painting with iodine is useful.

Salol in Dysentery.—Dr. R. B. McCall writes to the *Medical Brief* that in treating a case of dysentery in a child five years old he tried the methods of treatment which an experience of fifteen years had made familiar; but, as the boy continued to grow worse, he resolved to try salol, which he administered in two-grain doses every three hours. In speaking of the marked and rapid improvement which followed, he says: "In all my experience I never saw the efficiency of a medicine so unmistakably portrayed by characteristic results—the effects following close in the wake of the cause. Dose for first two days was two grains every three hours, increased to three grains, and continued at that as the maximum for three days longer; after which it was given for five days longer in diminishing quantities until left off.

"In about ten days nearly 200 grains were taken, by a child five years old and that without the least sign of oppression, disturbance of any kind, of stomach, heart, or kidneys, or of brain or mind. I believe salol is perfectly safe to be used in suitable doses at any age, and am persuaded from the above case and from a little experience in summer diarrhœas, wherein its influence was unquestionably kind and effective, that it is destined to be a valuable agent."

Simple Chancres Indurated by Contact of Urine.—Professor Fournier presented (*Jour. of Cut. and Genito-urinary Diseases*) a patient showing several chancres of the prepuce which have the objective aspect of simple chancres, but which to the touch are indurated; beneath them is felt a veritable indurated nodule. In the groins there is no adenopathy, and inoculation upon the arm had a positive result. The induration which accompanies the sores is of an irritative origin; in fact, the patient urinates upon the lesions and bathes them in the urine, which he considers an excellent remedy. Fournier insists upon the practical importance of these cases. The simple chancre is often indurated, and this induration alone cannot be considered as demonstrative of the existence of syphilis. The agents of this induration are multiple, and embrace all sources of irritation, such as dirty dressings, excessive cautery, but especially constant contact with urine.

Infantile Convulsions.—Mr. Valentine Knaggs (*Med. & Surg. Rep.*) advises the use of calcium sulphide in small and repeated doses, as a remedy for infantile convulsions and other nervous diseases. He has observed the best results in convulsions from dentition, falls on the head, meningitis, and acute tuberculosis. For infants under six months of age, Dr. Ringer's prescription is recommended. It is prepared by dissolving a grain of sulphide of calcium in a half a pint of water, of which a teaspoonful is given hourly, the dose being cautiously increased if need be. Dr. Knaggs has found it advantageous to combine this treatment with the administration of antipyrine.

Salicylic Acid in the Treatment of Scarlatina.—A writer in the *Rev. des Malad da l'enfance* says he has administered the above drug in one hundred and twenty-five cases of scarlet fever of a severe type in children, with the happy result of a reduction of the mortality to 3½%. His method has been to give doses proportionate to the

child's age every hour during the day, and every two hours during the night. The writer believes that by this method of treatment he obviates the very serious complications of scarlatina, such as uræmia, anasarca and diphtheria. This method of treatment to be effectual should be begun early, not later than the fourth day, and should be continued for some time after all trace of fever has disappeared in order to lessen the probability of a relapse.

INTERNATIONAL MEDICAL CONGRESS.—We, the undersigned, do hereby give notice, that according to the resolution passed at the Washington meeting, September 9th, 1887, the Tenth International Medical Congress will be held in Berlin. The Congress will be opened on the 4th and closed on the 9th day of August, 1890. Detailed information as to the order of proceedings will be issued after the meeting of the delegates of the German Medical Faculties and Medical Societies, at Heidelberg, on the 17th of September in the current year. Meanwhile, we should feel sincerely obliged, if you would kindly make this communication known among your medical circles and add in the same time our cordial invitation to the Congress. Von Bergmann. Virchow. Waldeyer.

PRIVATE HOSPITAL.—We take great pleasure in calling attention to the private hospital recently opened by Dr. Rosebrugh, of Hamilton, for the treatment of medical and surgical diseases of women. Especial pains have been taken in fitting up the operating rooms for abdominal surgery, combining all modern improvements in the way of plumbing, ventilation and other sanitary arrangements. We are pleased to note such careful preparation for this work by Dr. Rosebrugh, and as he now is one of the oldest abdominal surgeons in Canada, we heartily wish him abundant success in his new undertaking.

TREATMENT OF BURNS OF THE FACE.—Christopher Heath recommends, *Lancet*, the following for superficial burns of the face:

Collodion,	1 part.
Castor oil	2 parts.

This mixture, while it does not set as firmly as collodion, sets sufficiently to protect the part from the air, which Mr. Heath considers is the great point.

A ten grain to the ounce solution of nitrate of silver, by forming a slight superficial eschar all over the burnt surface, is another good application, though rather painful at first.

OBSTINATE VOMITING.—The following formulæ (*La France Méd.*) may be useful for reference:

(1) R.—Tinct. of iodine . . 16 drops.
Distilled water . . 60 grammes.—M.
Sig.—A tablespoonful every half hour.

(2) *Randolph's Mixture:*
R.—Creasote . . . . 20 drops.
Acetic acid . . . 40 "
Sulph. morphine . 0 gr. ½.
Distilled water . . 60 grammes.—M.
Sig.—Two or three tablespoonfuls every half hour.

(3) R.—Phenic acid . . . . 1 drop.
Chloroform . . . 3 drops.
Alcohol . . . . 20 "
Distilled water . . 15 grammes.—M.
Sig.—For one dose; to be repeated one-half hour later, if necessary. Especially useful in Asiatic cholera.

(4) *Cholera Infantum:*
R.—Phenic acid . . . 25 drops.
Alcohol . . . . 25 "
Peppermint water . 45 grammes.
Mucilage of gum arabic,
Syrup of poppy . āā 15 drops.—M.
Sig.—A tablespoonful every two hours.

(5) *Vomiting of Pregnancy:*
(*a*) R.—Elixir of opium . 30 drops.
Brom. pot. . . . 1 gr. 8.
Water . . . . . 60 grammes.
Sig.—For rectal injection.

(*b*) *Dujardin Beaumetz:*
R.—Hydochlor. cocaine . 0 gr. 42.
Distilled water . . 300 grammes.—M.
Sig.—Take a teaspoonful every hour. To avoid the vertigo, remain in the recumbent position.
(*c*) R.—Fl. ext. viburnum . 3 gr. 75.
Sig.—To be taken at successive times.

BELLADONNA WITH BROMIDE OF POTASSIUM IN ENURESIS.—Dr. Campbell Black, in a letter to the *Br. Med. Jour.*, states that the above combination has been a favorite with him for the past fifteen or twenty years. He believes it to be of great

efficacy "in all cases of preternatural excitation of the reflex arc, such as obtains in epilepsy, enuresis, spermatorrhœa," etc.

HAY FEVER.—Dr. Jacquess, writing to the *Med. Brief*, says of the following remedies. My wife has been a sufferer from hay fever for fifteen years, and they are the only remedies I have found to relieve her:

℞.—Liq. Arsenical. . . . . 1 drachm.
Tinct. Belladonnæ . . . . 2 ounces.
M. Sig.—Five to ten drops, three or four times a day, commencing three or four weeks before the expected attack.

Also:

℞.—Glycerini . . . . . 1 ounce.
Acid Carbol. . . . . 20 drops.

Apply up the nose and bathe the eye-lids, two or three times a day. For the cough, use the glycerine and carbolic acid internally.

CONSTIPATION IN FEMALES.—The following is said (*Lutand, Rev. de Thér.*) to be very efficacious in the stubborn constipation of females:

℞.—Cit. of iron and ammon. . 31 grains.
Fl. ext. of cascara sagrada . 32 ♏.
Saccharine . . . . 8 grains.
Distilled water . . . f ℥ijss.--M.
S.—Half teaspoonful before each meal.

FOR LEUCORRHŒA.—*Med. Prog.* gives the following from *Gaz. de Gyn*:

℞.—Infusion of chamomile . . ℥xvij.
Alum . . . . ℥ijss.
Iodide of potassium . . ℥j.
Tincture of iodine . . ♏xxxij.--M

Three injections should be made daily, and, in addition, general tonics and sulphur baths are advisable.

CORROSIVE SUBLIMATE FOR HYDROCELE.—Dr. Barnard, writing to the *Lancet*, says that a solution of corrosive sublimate, one in 1,500, gives excellent results. He says that the untoward effects of iodine, such as pain, shock, consequent irritation and inflammation, were eliminated by this treatment.

PRESENTATION.—Dr. Lawton, of Harwich, was the recipient of a handsome solid silver water set, on the occasion of his leaving Harwich with his wife, to reside in England. We beg to present our congratulations and best wishes for the future happiness of Dr. and Mrs. Lawton.

CHILBLAINS.—The following is said (*Med. Age*), to be an excellent remedy for chilblains:

Spirit camph.; tinct. opii, āā ℥ij; acid carbol., gr. xl; spirit vini, ℥iv; aquæ, ℥iv.

BROMIDIA.—I have used the Bromidia (Battle) and the results obtained have been really excellent. It certainly combines all the advantages of other preparations of this nature, while at the same time it possesses none of their disadvantages. The fact that it produces no unpleasant sensation on awaking, renders it specially valuable.

St. Nazaire-sur-Loire, France. DR. LUD. MARC.

PERSONAL.—Dr. Bowlby, Jr., Trin. Coll., has lately succeeded in taking the L.R.C.P. Lond. and M.R.C.S. Eng., diplomas. He is one of the few Canadians who hold the double English qualification.

On and after July 30th, 1889, *The Auerican Medical Digest* will be merged in the *Philadelphia Press and Register*, both being published by The Analyst Publishing Co., 10 Park Place, New York.

HIS ROYAL HIGHNESS the Prince of Wales has sent a donation of one hundred guineas to the fund which the Lord Mayor of London, is raising in aid of the Pasteur Institute of Paris.

Books and Pamphlets.

A SYSTEM OF OBSTETRICS, by American authors. Edited by Barton Cook Hirst, M.D., Associate Professor of Obstetrics in the University of Pennsylvania, etc., etc. Vol. II., illustrated with 221 engravings on wood. Philadelphia: Lea Brothers & Co.

We can only again repeat our criticism on volume I. The second volume of this work bears out in every way our anticipations of what the work would be, when reviewing the role of those who had promised contributions. This work not only treats of obstetrical conditions in the ordinary set way, but being an eminently practical as well as an exhaustive treatise, deals in the fullest possible manner of the hundred and one accidental complications which may arise in obstetrical cases. In volume II. considerable attention is given to instrumental labour and to turning. The pathology of puerperal infection is ably and scientifically discussed, and the most modern views re-

garding its prevention ably explained, as well as stress lain upon some older and very practical points which in this age of fine theory might be passed by or forgotten.

The chapter on inflammation of the breast, and allied diseases connected with childbirth, is worth the whole price of the volume. It is practical, and so far as our judgment goes, complete. Indeed one might so speak of each succeeding chapter of this very estimable work which we apprehend when completed, will be one of the most classical works on obstetrics to be found in any language.

A TREATISE ON SURGERY, its Principles and Practice, by T. Holmes, M.A., Cantab, Consulting Surgeon to St. George's Hospital, Associate Member of the Chirurgical Society of Paris. With 428 illustrations. Fifth edition. Edited by T. Pickering Pick, Surgeon to and Lecturer in Surgery at St. George's Hospital, etc. Philadelphia: Lea Brothers & Co. Toronto: Carveth & Co.

The present edition of the above popular work is considerably enlarged and is certainly brought up by its able editor to the standard of the present knowledge of surgery. The section on Diseases of the Eye has been wisely, we think omitted. The reasons for such omission, in the present stage of ophthalmic surgery are obvious. Considerable changes have been made in the discussion of inflammation; wounds and their treatment; tumors; diseases of bones and joints; abdominal surgery and intestinal obstruction, and diseases of the breast. Another especial feature of the new edition is the discussion of operative treatment in reference to cerebral localization. The general plan and character of the work leave nothing to be desired, and the student will find all important matters pertaining to the subject of surgery, concisely yet plainly put.

A GUIDE TO MATERIA MEDICA AND THERAPEUTICS, by Robert Farquharson, M.D., Edin., F. R.C.P., Lond., LL.D. Aber. Lecturer on Materia Medica at St. Mary's Hospital Medical School, etc. Fourth American, from the fourth English edition, by Frank Woodbury, A.M., M. D., Professor of Materia Medica, Therapeutics and of Clinical Medicine in the Medico-Chirurgical College of Philadelphia, etc. Philadelphia: Lea Brothers & Co. Toronto: Carveth & Co. 1889.

The size of this always popular book has been increased by about sixty pages. The principal changes made have been in leaving out certain remedial agents which have become obsolete, and in adding a large number of others which are now looked upon as reliable and lasting. The list of omissions might, we think, have been made larger without lessening the value of the book; but the author is hampered, as is every lecturer on the subject, by the retention in the B. P. of scores of useless articles which are never prescribed by scientific physicians, but which are solely and truly a burden to the student. The form of the work is retained, the physiological and therapeutical actions of the chief drugs being placed side by side. It will be found a handy book of reference in therapeutics and materia medica, both to the busy practitioner and to the medical student.

DISEASES AND INJURIES OF THE EAR; Their Prevention and Cure, by Charles Henry Burnett, A.M., M. D., Aural Surgeon to the Presbyterian Hospital; one of the Consulting Aurists to the Pennsylvania Institution for the Deaf and Dumb, etc., etc. J. B. Lippincott Co., Philadelphia and London. Price $1.

In this little treatise the author aims at presenting the subject of Diseases of the Ear "in a form free from technical terms," and we think he has eminently succeeded. In no subject in medicine is prevention simpler and more important than in diseases of the ear, to recognize the early symptoms is often to save a life. We think this work of Dr. Burnett is one which will give valuable information in its department, and as a plain and practical treatise on Diseases of the Ear, we can highly recommend it to both physician and layman.

EXPLORATION OF THE CHEST IN HEALTH AND DISEASE, by Stephen Smith Burt, M.D., Professor of Clinical Medicine and Physical Diagnosis in the New York Post-Graduate Medical School, and Hospital Physician to the Out-door Department, Bellevue Hospital. D. Appleton & Co., New York.

This is a practical treatise of 206 pages, abundantly illustrated. It deals in a ready way of the ordinary methods of physical examination of the thoracic viscera. Its rules are simple, easily applied, and it will prove a valuable little work to students in acquiring a practical knowledge of that all-important subject.