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# THE CANADA LANCET.

A MONTHLY JOURNAL OF

MEDICAL AND SURGICAL SCIENCE,  
CRITICISM AND NEWS.

## Original Communications.

### THE STUDY OF ANATOMY.\*

BY D. J. GIBB WISHART, B.A., (TOR.), M.D.C.M.,  
L.R.C.P., ENG.

Demonstrator of Anatomy, Trinity Medical College,  
Toronto; Professor of Ophthalmology, etc., Woman's  
Medical College, Toronto; Otologist and Laryn-  
gologist to the Hospital for Sick Children,  
Girls' Home, Toronto, etc.

In its association with Physiology and Pathology, Anatomy ranks probably as the most fundamental of those sciences which lie at the foundation of a scientific medical training. Without anatomy, physiological investigations would lack the necessary precision. Without anatomical knowledge, the surgeon who attempts any operation on the human body is no better than a quack or an adventurer. Without anatomical knowledge, the physician would be helpless in the diagnosis of disease.

The study of anatomy is, therefore, of great importance. This has long been acknowledged, and enlightened public opinion has aided in the good work by enabling the student to obtain the material for his investigations, while year by year facilities for study in the shape of accurate casts, models, sections, etc., are being produced, all of which combine to make the study of anatomy much easier and more satisfactory than our predecessors ever dreamed could be the case.

This is as it should be. A substantial foundation of sound anatomy is needful to the production of the polished, erudite physician, or skilful surgeon.

The subject of the study of anatomy may be looked at from two standpoints—that of the student, and that of the teacher—which I propose to do briefly in order:

\* Part of an address delivered at the opening of the 45th session of Trinity Medical College, Toronto, 1st Oct., 1894.

### THE STUDY OF ANATOMY FROM THE STANDPOINT OF THE STUDENT.

Vicary, our earliest English anatomical writer, in speaking of anatomy said, "The chirurgion must knowe the anatomie, for all authors write against those surgions that worke in man's body not knowing the anatomie; for they be likened to a blind man that cutteth in a vine tree, for he taketh away more or less than he ought to doo. And here note well the saying of Galer, the prince of philosophers, in his Estories, that it is as possible for a surgion not knowing the anatomie to work in man's body without error, as it is for a blind man to carve an image and make it perfyt."

For your guidance in study, I would venture to lay down the following propositions:

*Book-ism must be avoided.* As one of the foremost teachers of anatomy in England at the present day—Thos. Cooke—has lately said, "Book-ism is the fatal error of the day." I would emphasize what I have mentioned before, that the only way for you to learn anatomy is by actual dissection—practical investigation of the nerves, arteries, and muscles; practical inspection of the structures in all their relations as they join together to form the shapely limbs, or well developed body.

Do not imagine that to know *Gray* off by heart is to know anatomy. No lecturer, no text-book, can compete with the actual subject as a source of information. The knowledge which you gain by careful and laboriously painstaking investigation with your scalpel and forceps, is the only knowledge in anatomy which is worth gaining.

It is not the pilot who can recite an accurate description of the rapids that we would employ to steer us down the fierce current at Lachine, but the one whose knowledge of the hidden rocks and shoals has been gained by actual experience, and the physician's anatomical knowledge to be of use must similarly be practical in every sense of the work. Use your text-book then, be it *Gray* or *Cunningham*, as a *guide* only, and depend for your knowledge solely on what you learn from the body itself.

*Your knowledge must be accurate.*—This is of fundamental importance, whatever be the amount of knowledge you possess. Your study of anatomy

is intended to enable you, without hesitation, to place your finger on, or run a needle into, any structure of the body. The skin, which to others is opaque, must to you be transparent, and offer no obstruction to your mental picture of the parts in all their relations lying below.

The final student examining a patient's chest, has made poor use of his dissecting room privileges if his knowledge there gained does not enable him instantly to picture to himself the relations of the lungs, heart, nerves and vessels lying below the chest walls, and thereby to note any sign of a variation from the normal.

James McCartney, in St. Bartholomew's Hospital, London, used to illustrate the value of this accuracy of knowledge by cutting down upon and tying the femoral artery while standing blindfold, or with his back to the patient.

To enable you to obtain this accuracy of knowledge, you must dissect carefully, methodically, and personally, every part. I would suggest that the dissection of to-morrow be read over to-night, and that then to-morrow, dissector in hand, you carefully verify what you have already read—thus stamping it upon your brain.

*Three methods of study must be pursued.*—Anatomy will be presented to you in various forms. From your lectures and your text-books you will derive a knowledge of the various structures taken in their continuity, the nerves from their origin in the brain and spinal cord to their ultimate distribution in the body and extremities; the muscles from their origins to their attachments, and so forth.

From your dissector, and the bodies on the dissecting table, you will derive a knowledge of the nerves and muscles, vessels and glands as they lie in relationship to each other in the various stages of the dissection, the consideration of every component part being pursued together.

Lastly, from the study of frozen sections, prepared sections, and casts, you will derive a knowledge of the relation of undisturbed parts, which is the essence of surgical anatomy. When cavities like the thorax and abdomen are opened, the various viscera are displaced, and no anatomist can replace them as they were before. We must then use the sections for the purposes of comparison with our dissections.

In a recently published article by Professor McAlister, of Cambridge, that eminent anatomist says, "these sections are not mere superfluities, they are necessary parts of the teaching apparatus in any properly equipped school, for we see the parts in the anatomy room not as they were, but as our disturbance has made them. Take for example the flattened liver as you see it on the table, and compare it with the liver of the frozen body. The former presents a form which the organ could not possibly assume in its normal position when pressed upon—fascetted and moulded by the surrounding viscera and muscles. Take also the pancreas; you know it as shown in sections, or in the model, to be quite a different thing from the long, tongue-shaped gland formerly figured in text-books. But the liver and the pancreas of the model are the organs as they exist in the condition with which the physician has to deal, and it is in these forms that these organs must be known if we are to use to advantage our anatomical knowledge for clinical purposes. Dissection is the only way of learning structure and details, sectional study is the only way of learning relations."

All three modes of study are absolutely necessary to a comprehension of the subject, but do not expect any one of them to fill the place of the whole. Each has its value, and all must be used. The student who wisely avails himself of all these will lay the only foundation that should be laid, in his study of the body which he proposes to treat in disease.

#### ANATOMY FROM THE STANDPOINT OF THE LECTURER.

This is a transition period in the study of medicine. Discussions are taking place daily on the pros and cons of the advisability of raising the standard of matriculation. On the one hand the possession of a B.A. degree is held to be the qualification which should preface the entrance on a medical course. On the other hand, ideas are being advanced in favor of including such subjects as biology, comparative anatomy, and morphology, in the matriculation examination for medicine.

The length of the course has been increased by the Medical Council of Great Britain, and by our own licensing body in Ontario, while the univer-

sities are following suit by lengthening the sessions from six to nine months.

The relative value of didactic, as opposed to clinical, teaching, is another subject which is attracting the attention of teachers, with a decided, and, I think, a right tendency in favor of devoting a larger proportion of the time to the latter.

Again, the sub-divisions of medicine and surgery have increased so rapidly during the last quarter of a century that some re-arrangement of the course of study must take place, or the student will be overwhelmed by the task before him, if a fair knowledge of all is to be expected or attained.

When so many questions of great importance are pressing upon us for solution, it would be a matter of surprise if the teaching of anatomy presented no knotty problems, especially when we consider the immense amount of original work that is being done in this department alone. During the year 1892, it is estimated that the "literature of new works in human anatomy amounted to more than 2,000 octavo pages."

The science of anatomy is not standing still; it has not reached its limits, neither is it possible to fix any limits to the field it occupies. The textbooks on the nervous system, of even five years ago, are practically obsolete—the advance in our knowledge of this system has been so great. Morphology is one of the departments which has of late received special attention at the hands of anatomists, and through it we are receiving new light upon many of the most intricate problems in the causation of disease, especially along the line of development and heredity. The presence of sarcoma, the cells of which have no analogy with any adult tissues, but represent an embryonic form not normally found in the adult body, will probably find its explanation at the hands of the morphologist. Biology, zoology, and comparative anatomy have each their recognized place in this good work. Every teacher of anatomy must make himself more or less conversant with all these subjects, if he would teach to profit. While, however, this is true, he must be wise in his choice of mental *food* for his students; and where there is so much, the choice is difficult, and this difficulty has led to a wide divergence of theory and of practice on the part of teachers of anatomy.

We find Professor Allen, of Pennsylvania University, expressing himself on this subject before the Association of American Anatomists this year, as follows: "In most institutions, I regret to say, the standard of anatomical teaching is practical in character, and not the one which is most useful as a discipline of the mind." And again, "I cannot refrain from an expression of regret that . . . the demands of the surgeon still dominate the lecture hall."

He would advocate the study and teaching of anatomy from the purely scientific standpoint of view, when he says, "the acquisition of knowledge for its own sake—the determination of general principles that reveal the existence of law—awakens and maintains pleasures and interests in the mind of the anatomist, compared with which the practical use that he can make of the knowledge appears to be poor and mean."

On the other hand, Mr. Kent, Prof. of Anatomy in Glasgow, in an address delivered last October at the opening of St. Mungo's College, bemoans this very tendency on the part of anatomical teaching, and advocates a modification in the teaching and examinations so as to make anatomy the Institutes of Surgery, in the same manner as physiology is the Institutes of Medicine. Thomas Cooke, the well known anatomist of London, in a letter to the *London Lancet* of September 1st, 1894, fiercely attacks the present methods of teaching and examining in anatomy in Great Britain, pointing out that under these the student becomes a *scientist* but not a *practitioner*, and that gentlemen thus turned out are not to be safely trusted with the lives of their patients.

I have no wish to undervalue in the very slightest degree morphology, biology, zoology, or the scientific aspect of anatomy, but *they must be kept out of the curriculum of medicine*, or at any rate in the background. The teacher should utilize the rays shed by these studies to illuminate his explanations, to elucidate the apparently unreasonable presence of certain structures, to explain the causes of variations from the usual form, and in many other ways. But the student's attention must not be diverted into these side lines from his one aim and object—to be a physician. "There are possibilities of anatomy which are the impossibilities in the medical course," and this should be pointed out, so that the horizon of the student

may become enlarged and an impulse given to post-graduate study along these lines.

Professor Dwight, of Harvard, in speaking of this, says: "As a practitioner myself of twenty-five years standing, I am appalled at the amount of knowledge of all kinds which is now necessary for the simplest practice of the profession by any one who would not fall behind his colleagues. I heartily agree with Huxley's saying 'that whoever adds one tittle that is unnecessary to medical education is guilty of a very grave offence.'"

Wherever a department of the medical course is in charge of a professor whose whole time is devoted to his professorship, there is an ever present danger that he will become a man of one idea, absorbed in his one department, to the exclusion of others, failing to keep the subject which he teaches within the bounds which it must occupy, if fair play and no favor, to all the departments for medical training, is to be the rule. You can magnify a part till it appears larger than the whole of which it forms a part. I am afraid some of our teachers of biology, and the other departments which I have named, always apply the magnifying glass to the eye with which they behold their own departments, else we would not have the relatively undue attention paid to these subjects which we find even in this fair city.

Apart from the fact, which is acknowledged on all hands, that the student's time is already overcrowded with work which is absolutely needful, there is also the danger of misdirecting the student's energy, which should be devoted to medicine, along side-lines, scientific though they be.

Permit me the following quotations to illustrate my meaning. One writer expresses himself thus: "In many medical schools of the present day young men are set down to spend three or four valuable months of the year in the study of zoology and comparative anatomy. . . . If I had power in this matter, I should cut all these subjects out ruthlessly. . . . When the time which a man possesses to become familiar with the structure of the human body is so limited, what earthly business has he to be studying the anatomy of star fishes and crabs and lobsters?" The speaker is no less a man than Huxley.

One of the oldest, as well as the wittiest, of our American teachers of anatomy, whose name is

everywhere received with honor, illustrates my second point as follows:

"Is not the question, why our young men and women so often break down, and how they may be kept from breaking down, far more important for physicians to settle than whether there is one cranial vertebra, or four, or none? But I have a taste for the homologies. I want to go deeply into the subject of embryology—I want to analyze the protonihilates precipitated from pigeons' milk by the action of the lunar-spectrum! Shall I not follow my star? Shall I not obey my instincts? Shall I not give myself to the lofty pursuit of science for its own sake? Certainly. You may if you like; but take down your sign, or never put it up. That is the way Dr. Owen, Dr. Huxley, Dr. Agassiz, Dr. Wyman, Dr. Gray, and Dr. Chas. T. Jackson settled the difficulty. We all admire the achievements of this band of distinguished doctors who do not practice. But we say of these writers of all pure science, as the French officer said of the charge of the Six Hundred at Balaclava: *C'est magnifique, mais ce n'est pas la guerre*—it is very splendid, but it is not practising the doctor's business." Thus says Oliver Wendel Holmes.

If then I acknowledge the use in medicine of such subjects as morphology and biology, or advocate their study, and yet would banish them from the medical course, where, you ask, would I have them studied? *By preference, in a post-graduate course.* It has been argued by some sound teachers, that they logically precede the medical course. This is not proven, and if it were, the wisdom of directing thus forcibly the attention of High School students to the study of medicine is very questionable, even if their teachers were qualified to teach the subjects themselves. There are sound arguments in favor of post-graduate study, however. Firstly, our Council calls for a fifth year, to be spent in a laboratory for physiological and pathological research. Secondly, our Provincial Government has expressed itself by word and act as anxious to advance the science of medicine even to the extent of voting money for the purpose.

Let these two be brought to bear on one another, and instead of compelling our students to go abroad to Johns Hopkins University, or the German laboratories, for their fifth year, let

*the Government equip and endow a laboratory where our students can pursue post-graduate study.*

If the Biological Department of our Provincial University were used for this purpose, it would indeed advance science to our mutual good, instead of acting as an "apple of discord."

## NEUROTIC COMPLICATIONS IN LA GRIPPE.\*

BY STEPHEN LETT, M.D., M.C.P.S. ONT.

Medical Superintendent of the Homewood Retreat,  
Guelph, Ont.

Of the various diseases met with during the past decade, there is perhaps none in which neurotic complications have been more frequent than in that form of epidemic influenza which has swept over our land for several successive years, known as "La Grippe." Why such complications should exist to so great an extent in connection with this disease, is somewhat difficult to understand. We all know that the malady has a peculiar aptitude for searching out any weak organ or system of organs, and making its virulence and power felt upon such weakness; we also know that this is a very neurotic period, that people live at too high a rate of nerve pressure, that they wear out or exhaust their nervous systems prematurely, that they hand to posterity a much more unstable nervous organization than did their ancestors who lived by the light of other days, who did one day's work in a day and went to bed at early candle light, who worked during the day and rested both body and mind at night. These things being considered, it is but the sequence of events that many neurotic complications should accompany and follow so potent a cause as la grippe. Another very tenable explanation would seem to be, that the toxic element in the circulation, upon which the influenza of necessity depends, has a special affinity for the nervous system. This theory would seem to be sustained when we note the excessive amount of irritation set up in the nerves, producing many forms of neuralgia and various inflammations, in some cases not stopping short of symmetrical multiple neu-

ritis, a condition held by some to be conclusive of a toxic cause. Perhaps the truth may rest in a combination of these factors.

The neurotic manifestations of la grippe may best be considered as those occurring during the febrile stage, and those which may be classed as post-febrile or sequelæ. Early in the disease, nervous symptoms occur and may be so pronounced as to give the malady a distinctive character or neurotic type. Such symptoms would include a severe initial chill, followed by intense headache and neuralgia, pains in the course of sets of nerves, especially the fifth pair, down the spine—particularly noted in the lumbar region; also many painful neuralgic sensations, hyperæsthesia of the organs of special sense, obstinate insomnia which may be the forerunner of a transitory psychosis, associated with delusions or hallucinations of exaltation or depression, and which may be followed by a pronounced meningitis leading to permanent mental impairment or ending in coma or death. Many of the above symptoms are of course present in a more or less marked degree in the ordinary fevers and exantheas, but in epidemic influenza they are more pronounced and would seem to possess a distinctive character.

With regard to the nervous sequelæ of la grippe, two important factors should be borne in mind. First: Their severity bears no relative proportion to the severity of the primary disorder. Second: The most serious nerve disorders may follow a second or third attack of influenza, although those successive attacks may each be milder than the preceding one.

Amongst the nervous complications to be noted after the subsidence of the fever, may be mentioned the following motor disturbances: well-marked paresis of the facial and ocular muscles, and of the organs of speech; paralysis of one or more of the extremities as a result of degenerative neuritis, or, as has been recorded, severe organic changes in the central nervous system. Sensory disturbances are also present in some cases, such as hyperæsthesia and anæsthesia, either localized or extending to a more or less extensive area, and I have no doubt that many cases of partial deafness and "grip ear" depend upon an interference with the harmonious working of the auditory nerve. It is also common in the after stages of

\* Read before the Ontario Med. Association, June, 1894.

influenza to note an intense nervous prostration, making convalescence slow, tedious and discouraging.

In addition to the above post-febrile nervous disturbances, we meet with true psychoses of a marked asthenic character, which would appear to be the result of a toxic element, and have been classed by some authorities amongst the "Toxic Insanities." They present the following types: Acute mental exhaustion with confusion of ideas, stupor, or, perhaps, hallucinations or delusions, accompanied by great physical prostration; also, occasionally intolerance of light and sound. The majority of this class make a good recovery in a few weeks or months. Sometimes, however, a case will run into a chronic condition and become permanently mentally weakened.

Melancholia claims by far the greatest proportion of the post-influenzal insanities; fully one-half. This psychosis is usually present without marked delusion, but it is accompanied by all degrees of mental depression, with loss of interest in their daily avocation or home surroundings; forebodings of evil or impending calamity, bemoaning their pitiable condition, and frequently developing suicidal tendencies, which occasionally culminate in the successful accomplishment of the rash act, as a late report testifies with regard to both a husband and his wife. Some of these cases are extremely sensitive to light and sound, are easily agitated, and suffer more or less from insomnia; in fact the insomnia so frequently present in the convalescing stages of the influenza appears to be the starting point of this morbid depression. When suicide does not take place, and the family history is good, the prognosis is favorable.

Mania is the least frequent of the mental sequelæ of epidemic influenza, contributing only about 18% of the whole. The recorded cases point to an absence of delusion or hallucination, or even very severe maniacal excitement, the insanity is more of an asthenic type which, with sustaining treatment and a good family history, presents a favorable prognosis.

In addition to these principal types of insanity, we may have paranoia and post febrile hysteria. In such cases, however, a predisposing cause will usually be found, the influenza merely playing the

part of the match that started the fire in the already arranged kindling.

In all forms of mental and nervous maladies resulting from influenza, where there has not been some previous mental trouble or hereditary predisposition, the prognosis is usually favorable, though recovery may be slow; where these factors exist the contrary obtains.

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### HYDRONEPHROSIS OF ONE KIDNEY AND ATROPHY OF THE OTHER: A CASE.

BY ALEXANDER M'PHEDRAN, M.B.,

Associate Prof. of Medicine, University of Toronto, etc.

Wm. P., aged 33, a large well-built man, of steady habits, good family and personal history. Has been a postman for last three years; previous to that he worked on the Grand Trunk Railway. Has been very healthy until last October (1893), when he began to ail. He was confined to the house for three days at Christmas on account of a cold caused by getting wet. He resumed work though not well, and continued at it until Feb. 3rd last, when he consulted Dr. Allen Baines for failing sight and vomiting. He was ordered to bed. The face was slightly puffed; some pain in the lumbar region, and dull feeling in the body. Urine rather scanty, high-colored for a few days, afterwards pale. Thirst marked.

At Dr. Baines' request he was admitted to the Toronto General Hospital under my care, Feb. 13th. There was then excessive thirst, good appetite, normal temperature, pulse 80, hard and regular, arterial walls considerably thickened; apex impulse of heart nearly an inch to left of nipple line, diffuse and forcible. Slight mitral and aortic systolic murmurs. The aortic second sound accentuated. The face was markedly œdematous, the body generally, slightly so. The stomach was slightly dilated; the contents removed by a stomach tube an hour after a test breakfast showed a normal amount of free hydrochloric acid present.

Urine, pale yellow; quantity in 24 hours, 28 oz.; alkaline, with deposit of phosphates, no pus or casts. Albumin abundant; no sugar or bile; urea  $\frac{1}{2}$  per. cent.; sp. gr. 1010. The blood con-

tained 3,200,000 corpuscles per cmm. No hæmorrhages.

The treatment advised consisted in the administration of magnes. sulphas to act freely on the bowels, and liquor nitroglycerin sufficient to lower the pulse tension; and dry cup, followed by hot fomentations applied to the lumbar region.

15th. Had a convulsion. (Edema much increased. No change in urine. Pilocarpine gr.  $\frac{1}{10}$  subcutaneously produced free perspiration in ten minutes. Chloral hydrate was given to soothe the restlessness.

18th. Delirium, sometimes excited, during the night. Very restless, twitching of hands. Urine and fæces passed involuntarily. Died next day.

An autopsy was not permitted, but the kidneys were obtained. One was atrophied, the remains consisted of cicatricial tissue studded all over the surface with small cysts, and forming a small mass less than two inches in length. The ureter was very small and impervious.

The other kidney was the seat of marked hydronephrosis. The renal tissue was reduced to a thin layer in some places, and wholly absent in others. Not more than about one-third of the secreting tissue remained. The tubules in this tissue were widely separated by pressure, but there were no evidences of inflammation. The ureter was very slightly dilated in its upper three or four inches, all that could be obtained of it. It is to be regretted that the ureters could not have been examined fully; but a *post mortem* not being permitted, the kidneys had to be removed through small openings in the lumbar region.

The condition of the atrophic kidney was probably congenital; it does not seem possible that it ever possessed active secreting structure. The small cysts on the surface, doubtless, resulted from dilatation of imperfectly developed tubules. Bristowe\* points out that a hydronephrotic kidney may undergo quite as great atrophy as occurred in this kidney. But there were no lobulations to indicate that this one, like its fellow, was hydronephrotic.

A case is reported by Czerny† similar to the one here described. In his case the urine was normal. The hydronephrotic kidney was removed,

complete anuria followed, and on *post mortem* examination the opposite kidney was found atrophied and useless. This is the only case of the kind I have found recorded. In my case, as in Czerny's, the urine was doubtless normal until the autumn of 1893, when his health began to fail, a few months before his death. Some considerable time before his last illness, Dr. Baines had examined the urine and found it quite normal. The case illustrates to what a remarkable degree the amount of renal structure may be diminished without causing any alteration in the quantity or quality of the secretion. It is well known that large portions of the kidneys may be removed in lower animals with little if any effect on the urine.

### Selected Articles.

#### TREATMENT OF PERITONITIS.

In considering the treatment of any grave affection, it is well to recollect that certain of the so-called symptoms of a disease are not gross evidences of a disturbing evil within the body, but are rather the natural expression on the part of the organism to rid itself of a trouble. Many symptoms are, in fact, curative acts, and are the measures of a natural treatment and not the mere purposeless signs of an unnatural disturbance.

In peritonitis, the exhaustion, the rigidity of the belly-wall, the pain, the vomiting, and the not infrequent sense that the bowel needs to be emptied of flatus, would suggest the recommendation of absolute rest, of attempts to relieve pain, of starvation, and under certain circumstances, of means to relieve the intestine. If, in contemplating a patient with peritonitis, one could regard his more conspicuous symptoms as natural attempts to afford relief, they would appear to be in the direction of securing quiet within the enclosure of the abdomen, and of effecting an evacuation of the alimentary canal.

In the account which follows of the treatment of peritonitis, this suggestion from the therapeutics of nature is not disregarded.

1. *Rest*.—Absolute rest in the recumbent position appears to be the first obvious indication. The knees may be flexed over a pillow to lessen the tension on the abdominal walls and to favor the patient's instinct to assume that posture. The upper part of the chest and the ever-restless upper limbs should be protected by a woollen jacket, and no reasonable restraint offered to the patient's inclination to hold the hands above the

\* Theory and Practice of Medicine, 7th ed., page 378.

† Fagge's Principles and Practice of Medicine, 2nd ed., Vol. II, page 674.



head. This favorite posture, by acting upon the lower parts of the thoracic wall, assists also in diminishing the tension within the abdomen. It is cruel to insist that the hands should be kept beneath the bedclothes. The state of misery in peritonitis is acute enough without being increased by purposeless and rigid formulæ. Cold hands do not cause death, but as on exposure they tend to become cold, they should be covered up. The wretchedness of restlessness has a natural relief in little movements.

2. *Feeding.*—The old rule of eighty years ago of giving as little food as possible by the mouth cannot be improved upon. The stomach is not in a condition to receive nourishment, and what is taken usually remains unutilized and is returned unchanged. The practice sometimes met with of laboriously plying the patient with teaspoonfuls of this or that meat extract, recalls the legend of the *Daiides*, who spent their energies in pouring water into pitchers without bottoms.

In the matter of feeding there are two extremes to be avoided. The first is the rigid, unreasoning, and often needlessly cruel prohibition of any kind of food by the mouth; and the second is the reckless or intemperate use of ice or iced fluids,

Thirst is often a most terrible symptom in peritonitis. It is not always quite relieved—at first, at least—by rectal injections. The patient is ready to give his life for a drop of cold water. If he takes it, he is sick, but he is much relieved. This little indulgence does not introduce anew the symptoms of vomiting. It is there but it is latent, and the drop of cold water only makes it evident. The patient will not die of vomiting, and simply because a rigid exclusion of all fluid by the mouth does not render the symptom apparent, it does not render it non-existing. The man would sooner vomit than endure this thirst. Very often great relief is given by allowing a fairly copious draught of fluid, which is soon rejected, and which—as it were, by washing out the stomach—leaves the patient for a while infinitely comforted. On the other hand, the perpetual sucking of ice is as bad as the perpetual teaspoonful of useless jelly of decomposable meat-juice. The filling of the stomach with iced water does undoubtedly add to the general depression of the patient, especially when vomiting has been brought into abeyance by morphine.

The right course appears to lie between these two extremes. There should be no rigid formula except this: let the patient take as little food as possible by the mouth. If there be a raging thirst, let him have a little ice,—and very little suffices, or a little iced milk and soda-water; or if, as is common, the inclination lies to something warm, let him take a few teaspoonfuls of hot water or of weak tea made hot, or of beef-tea

at a like temperature. It is not the nourishment that is needed, but some fluid in the stomach.

It is better, within reasonable limits, to be guided by the patient's own instincts than by a blind formula founded upon a doubtful physiology.

3. *Opium.*—Here, again, the old practice appears to be the best. Give as little opium as possible. In the early stages of acute peritonitis, and especially in the perforative forms and in those depending upon appendix troubles, morphine, in the form of a hypodermic, is absolutely necessary. In the worst instances, it may certainly avert death from shock. Under its influence the patient revives and the more intense symptoms become greatly modified. Morphine should never become a feature in the routine care of peritonitis: it masks the symptoms, hinders the natural process of cure, and hampers treatment. The indication for it is actual pain, and not mere restlessness and misery. In the really septic forms but very little morphine is called for, and often none at all. Its evil effect in the after-treatment of cases of abdominal section has been amply demonstrated. In quite hopeless cases there can be no objection to its freer employment, but in other instances the administration and the dose of the drug must be sanctioned and measured by the one symptom,—pain.

4. *Aperients.*—At the commencement of the century the use of aperients was a necessary element in the routine treatment of peritonitis. By aperient treatment may be understood the obtaining of an action of the bowels by either drugs or enemata. After a certain number of years the practice altered, and the dictum went forth that when any signs of peritonitis were present, aperients were to be absolutely forbidden.

Within the last few years the more ancient method has been revived, but it has been revived with very radical modifications. To Mr. Lawson Tait the profession is indebted for this return to an almost forgotten practice, and above all, for the employment of that practice with the new element of discrimination. Mr. Tait's measure has been frequently spoken of as "the treatment of peritonitis by aperients," and it has been assumed by some—and probably with disaster—that a purgative is necessary in every case of peritoneal inflammation. Mr. Tait's precise words on this precise subject are as follows: "I have never said that the purgative treatment will cure peritonitis, for peritonitis, once it is completely established, is a practically incurable disease and almost uniformly fatal."

It is on this very point that the centre of the position with regard to this treatment turns. Aperients can never be adopted in the routine treatment of peritonitis. In the larger proportion of cases this measure is entirely useless, and

in the great series of the septic forms it is more or less impracticable.

It is a fact that the most successful treatment of acute obstruction of a certain grade is that which provides for a thorough evacuation of the loaded gut. A blindly-executed enterostomy, with an utter ignoring of the cause of the obstruction, has been attended by better results than have operations in which the agent of the obstruction has been discovered after elaborate search and has been satisfactorily dealt with. This treatment of acute obstruction by the evacuation of the bowel before all things we owe to Benjamin Travers, the father of intestinal surgery.

In cases of strangulation of a certain degree he insisted that the bowel should be cut into and emptied, even after the obstructing band has been removed. He considered that the operation was not complete until this had been done. He urged that safety was only to be obtained by an evacuation of the gut, and he supported his views by numerous cases and experiments.

Another illustration of these self-same points is afforded by perityphlitis. In a previous section of these lectures it was shown that those cases of perityphlitis in which there is diarrhoea, or in which the bowels act naturally or under the influence of aperients, are attended with a much lower mortality than are the cases in which constipation is marked. The writer is convinced from his experience of the value of the aperient treatment in the earliest stages of these cases, and of the pursuit of the same measure in selected instances. In some cases, however, nothing within reason will bring about an action of the bowels. When once general peritonitis has established itself, an aperient is without avail.

5. *Blood-letting*.—This measure of treatment may with advantage be more extensively employed. It is no longer likely to be used in the unreasoning and mechanical fashion of bygone days. In robust forms of localized peritonitis, blood-letting is attended with admirable results. In perityphlitis the application of half a dozen leeches often acts with magical effect. In the older accounts of the treatment of peritonitis by bleeding, no good appears to have followed in cases in which the inflammation was diffused, except, perhaps, in some examples due to injury. On theoretical grounds this is precisely what would be expected.

6. *Operative Measures*.—These are represented by incision and drainage, with or without irrigation. This treatment must be considered, as it applies to peritonitis, under two entirely different aspects. In one series of cases there is vigorous, well-defined inflammation, the local symptoms are marked, pus is produced and may be considerable in amount, and the exudation is more or less clearly localized. In the other series of cases the

peritonitis is diffused, the constitutional symptoms are more prominent than the local ones, the changes in the serous membrane—so far as evidence of inflammation is concerned—are comparatively slight, and are out of proportion to the general disturbance.

In the first series of cases surgical interference by incision and drainage ranks with the procedure of evacuating a large abscess.

In the second series the cut into the abdomen and the subsequent flushing out or drainage are to be compared with the washing out of the stomach after an active poison has been swallowed.

The operative treatment of suppurative peritonitis, especially when the effusion is localized, has been remarkably successful. Records of the operation extend back into the eighteenth century, and all that modern surgery can lay claim to is the application of the treatment with greater boldness, with greater frequency, and with infinitely less delay.

The operative treatment of general diffused non-tuberculous peritonitis has so far no record to boast of and little progress to chronicle. It is doubtful whether a single human life has been saved by surgical interference in a genuine case of peritoneal toxæmia. Surgical treatment has been most discouraging in acute peritonitis following upon gangrenous hernia, upon operation, and upon puerperal infection. It has met with but little better results in cases of perforation in which the serous inflammation has been well established.

As to the actual mode of operating adapted for the different varieties of peritonitis, attention should be drawn to the following points. In all cases it is to be assumed that the skin over the operation area is cleansed and prepared in a suitable way, and that the surgeon adopts those measures which students in their examination papers are so fond of describing as "strict antiseptic precautions."

In cases of localized purulent peritonitis an incision should be made into the collection by the most direct route. When the pus has escaped, a rubber drainage-tube of suitable size with stiff fenestrated walls should be passed to the bottom of the cavity. A dressing of some absorbent material, such as Tillmann's papers, sal alembroth, or cyanide gauze, is then applied. No advantage follows fuller evacuation of the pus by squeezing or the immediate irrigation of the cavity, and distinct harm may be done by scraping the wall of the inclosure, by persistent searching for a diseased appendix or other cause of the trouble, and by stuffing the exposed space with a considerable quantity of gauze.

At the end of twenty-four or thirty-six hours the irrigation of the cavity may be commenced and continued twice daily, and now and then a little iodoform emulsion may be introduced.

In some examples of perityphlitis a well-encapsulated collection of pus is not exposed, but the knife enters into an ill-defined district containing a variable quantity of thin, greenish, and often offensive matter, which appears to saturate the tissues. In such circumstances a drain composed of strips of iodoform gauze, which are carefully introduced into the lowest accessible recesses of the region, is of advantage.

In cases of generalized peritonitis the procedure adopted must obviously depend upon the cause and degree of trouble. If the exudation be serous, it will suffice if the fluid be evacuated, if the peritoneal cavity be gently dried in its most dependent parts by means of gauze sponges, and if the abdomen be closed without drainage.

When the exudation is sero-purulent, it is in many cases desirable that the cavity be irrigated. The fluid which appears to be best suited for this purpose is a six per cent. salt solution made warm. After the washing, the depths of the peritoneal cavity are dried, so far as is possible, with sponges, iodoform powder is very freely dusted over the portion of the serous membrane most involved, a long, rubber, fenestrated drainage-tube is introduced, and the abdominal wound is closed. Any treatment directed against the cause of the peritonitis will be independent of these measures.

There are cases in which the peritonitis is more plastic in character. The intestines are found to be matted together with grayish lymph, which may be present in considerable quantity. The breaking down of these adhesions causes no little amount of bleeding, and such a step is evidently destructive of a certain desirable process of repair. Still, in order to search for the cause of the peritonitis, assuming such search to be indicated, and to set free an amount of exudation which is imprisoned between the attach coils, this freeing of adhesions must be to a certain very limited extent carried out. There will probably be a sero-purulent exudation in the belly cavity, and the gentlest movements of the fingers among the recently attached intestines will set free more fluid, which will be probably less opaque. A clump of adherent intestines will often cover and protect a perforation, and the ubiquitous fingers will many times close such an opening with more speed and security than are provided by any system of suturing.

As the surgeon, therefore, reaches what appears to be the starting point of the peritonitis, he must proceed with the utmost caution, and be not only prepared, but rather inclined, to leave the actual *fons et origo mali* undemonstrated. The main purpose of the operation is to allow a noxious exudation to escape, and, if possible, to free the peritoneum of the cause of its trouble. In the class of cases now under discussion, a perforation

will be very often the starting point of the peritonitis; the lapse of time and the plastic character of the inflammation afford evidence that the perforation is, for the time being, closed. If the operator can rid the serous cavity of the effects of the perforation, he may often leave the breach itself to be dealt with by natural means. The wisdom of doing no more than is necessary, or as little as is obvious, is well illustrated by these cases.

*Irrigation.*—Mere blood is better removed from the peritoneal cavity by sponging than by irrigation. If the operation area be well circumscribed by sponges, if the shoulders be raised so that blood will reach the more dependent tracts, and if a sponge be introduced into the pelvis at an early stage of the procedure, there is little trouble with blood-clot. Coagulated blood is certainly very much more easily and certainly removed by means of gauze sponges than by a stream of water. The same observations apply to what may be termed healthy cyst contents, to fluid from hydatids, to bile, and to matter escaping from the stomach or intestine. With careful plugging and a watchful use of sponges a wide-spread extravasation is uncommon. If it does take place, the gauze can usually reach it. Irrigation would possibly have the effect of spreading the noxious fluid—as, for example, intestinal matter—over a still wider area. It may be said, therefore, that if certain precautions be taken, the cleansing of the peritoneal sac may be best and most safely accomplished by dry sponging.

If there be a considerable outpouring of such a material as putrid pus, or if there be a copious escape of gut contents, as from the giving way of a distended bowel above a point of obstruction, then it may be better that the whole peritoneal cavity be irrigated. In such a case the extravasated fluid and its wide distribution would render its complete removal by sponging difficult.

This irrigation is best conducted by the following means. The fluid used is a sterile six per cent. salt solution at blood-heat. It is introduced at low pressure, but in a wide stream. The irrigating-tube is of soft rubber and may have a diameter of three-fourths of an inch. The tube itself is introduced into the belly cavity. The flow through it can be regulated by a clip. Any form of rigid nozzle is to be most strongly condemned. The solution should flow gently into the abdomen. The peritoneal cavity is to be flooded and not to be scoured out with a violent stream of water, which hisses and rushes from a vulcanite nozzle as from a miniature fire-hose.

When the belly cavity is quite full of fluid, the surgeon's hand—which is already in position—is moved to and fro among the intestines with great gentleness. The coils of bowel are thus rinsed.

By a movement of the hand and by pressure here and there, the fluid overflows from the wound and is replaced by the steady stream.

As the water which escapes becomes clear, the upper end of the operation-table is raised, so that the shoulders are much elevated, and then little has to be done but to wash out the most dependent parts, including especially the pelvis, and so allow the upper parts to drain. Finally, what fluid remains in the pelvis is removed with sponges, and a sponge in a holder is retained in the bottom of the pelvis during the introduction of the stitches, and only withdrawn at the last moment.

*Drainage.*—It will be allowed by most that drainage is necessary when either an actually noxious material is left in the peritoneal cavity or when it is assumed that an extensive effusion will follow upon the laparotomy. Considerable differences of opinion must exist as to what constitutes, either in substance or in amount, a noxious material, and also to what extent a possible effusion is to be met by drainage.

A stout rubber drainage-tube of large size and well fenestrated, passed into the midst of the area which is the most disturbed, appears in most cases to answer all reasonable purposes. It is not suited for most tuberculous cases. It must be assumed that the surgeon has no objection after the operation to frequent and perhaps extensive changes in the patient's position for the purpose of assisting the process of drainage. The author has seen no harm arise from a liberal fulfilment of this object. In certain instances, some of which have been indicated, a gauze drain appears to be better adapted for the case than a rubber one. This drain is simply composed of a long strand of iodoform gauze about one and a half inches wide and some five or six layers thick. It appears to have been first advocated by Bardenheuer. In a case of purulent peritonitis, Jalaguier has passed these strands of gauze in all directions among the intestinal coils from the diaphragm to the pelvis with good result.

A like proceeding in like cases is advocated by Steinthal.

The great objections to the iodoform drains are these: They may induce symptoms of poisoning if very extensively employed, they are most difficult to remove unless there be a free discharge, and their use is apt to be followed by ventral hernia.

Some surgeons, either to supplement or to replace drainage, allow the wound to gape, or support it merely by a few quite loose sutures. This measure has been especially advocated in the treatment of perforative purulent peritonitis.

In conclusion, it only remains to be said that the surgical treatment of peritonitis has not yet reached a position which is either satisfactory or secure. There has been no lack of boldness in the

measure used and little sense of discouragement at the results obtained. Surgical enterprise has been directed against effects and against damage done, rather than against causes and the beginnings of evil. The surgeon holds the same position in regard to peritonitis which was held some thirty years ago in regard to wounds and more accessible forms of inflammation. At that time he dealt only with the consequences of pathological wrong doing, just as now he concerns himself with the prevention of troubles which he has learned to control. Peritonitis will be more successfully treated when measures can be directed against the sowing of the wind rather than, as now, against the curbing of the whirlwind.—Fredrick Treeves, in *Therap. Gaz.*

### CLINICAL NOTES ON ELECTRICITY.

To-day, in pursuit of our general plan of taking up the various modalities of electricity in medical use, we will turn to Franklinism. You see before you the best modern type of the Influence Machine and the various electrodes. You are already familiar with the special modes of administration.

The chief objections to static electrization is that the apparatus is not portable, and that it is expensive. These disadvantages are more than counterbalanced by the great efficacy of this current in properly selected cases, and where we can have the opportunity of using it. You have often expressed your surprise at the results you have seen in this clinic from its use. For my part I do not consider any physician thoroughly equipped to combat the great classes of chronic disease and functional disease unless he has an Influence Machine and knows how to use it.

This machine looks complicated, but it is really simple. It comprises the fundamental laws of all kinds of electricity. If you understand static electricity, you will understand the others. The principles of the Leyden jar are all that there are in any kind of electricity.

What is here called "electricity" is not in the tin foil of these jars, but in the glass. The molecules of the glass are distorted and strained, and may be so strained that the glass will break. When there is an electric shock, vibratory motion is transmitted as an electric current. The tin foil is a conductor, and the potential of a conductor is the same in every part of its mass. Thus the glass discharges its strain at all points.

"Static" comes from the Latin word *sto*—to stand. It was called so because electricity stood on an insulated surface. But if it jumps off as a spark, it is flowing or kinetic electricity. Some consider static electricity of no use, because, they say, it is on the surface, and therefore superficial in its effects. Experiments show that it does not

stand still at certain times, as, for instance, when it escapes as in the dry "electric bath." It becomes flowing, and so the word static is a misnomer so far as the actual treatment is concerned. Put the patient on an insulated platform, and connect with either pole. The charge is in direct ratio to the surface. When the patient is thus charged, the electricity is on the surface, but when the spark is drawn, it is in the patient.

The air is one of the greatest non-conductors there is. There would be little left to electrical science if air was a conductor of electricity. The spark is neither taken nor given. It is the composite effect of two electricities. The union is called a spark. When the patient gets the spark, the charge on the surface has rushed through him to that point. No conductor interferes, as the resistance is comparatively so little. In the galvanic and faradic electricity the voltage is comparatively small, but in static the spark ten inches has a voltage of 1,000,000. The galvanic has a large number of cells to get enough voltage. This machine is best for pressure or voltage. The ordinary of sixty volts will sometimes be enabled to overcome resistance. In this machine 600,000 volts are employed to overcome resistance, and hence it is so good in a large class of diseases where we wish a local penetrating effect, as in chronic rheumatism. It penetrates deep into the joints, the molecules are distorted and strained and changed in the diseased tissue, and a new nutrition is set up. Electricity is here most carefully measured. The nerve fibres receive a neural impulse and the muscles contract. When the spark strikes the tissue, if too strong, there may be a superficial sloughing. It acts to agitate and change the nutrition of tissue. It is an alternative, a tissue changer, and static is the best of the electricities for this purpose. It is difficult to define its limits. Its effects are general and far-reaching. The body is stirred up and change takes place. How do we know it does work? For some say the effect of all electricity is due to suggestion.

One real evidence that it does work is the effect on the circulation. If a patient sits fifteen minutes upon the insulated platform, the pulse will usually be raised fifteen to twenty beats. In Tachycardia it was first observed here, that the pulse was lowered from 140 to 90 in a few minutes. Temperature is also raised and lowered.

In the ordinary neurasthenic the temperature is often one-half to one degree lower.

In hypochondria, neurasthenia, and in many other functional conditions, I have observed that there is a lowered temperature; give static electricity fifteen minutes and the temperature will usually become normal.

Where the temperature is above normal we may lower it. I have deduced this law. Both in

pulse and temperature static electricity produces an equilibrium. This is true so far as I have observed. It would appear that the thermic and other nervous centres were effected.

Metabolism is the sum total of chemical exchanges that take place to constitute life. If oxidation is good, we have certain waste products. If oxidation is not good, we have other deleterious waste products, like the uric acid diathesis. Static electricity increases combustion, diminishes uric acid and increases urea.

Examine the urine of those suffering from mal-nutrition before giving static electricity, and after giving it, and you will find the urea increased and the uric acid diminished. Thus you give static electricity for mal-nutrition, and cure a large number of patients. Electricity is a general agent for producing general changes in mal-nutrition. You can use it with great success in anæmia, chlorosis, neurasthenia, hypochondria, melancholia, gout, rheumatism, in muscular rheumatism and in neuralgia, neuritis and chronic synovitis.

We can also use it to secure local effects, as at affected areas in spinal cord diseases. In paralysis you can pick out and put in action, if that is possible, each muscle in the body. For paralysed muscles, the spark fulfills the ideal requirement that the muscle should be stimulated periodically—that is to say, with a brief interval of repose (30 to 60 sparks per minute), in order not to do more harm than good, by establishing physiological fatigue and consequent increased waste in the muscle. The continuous stimulation of nerve or muscle is to be avoided.

An advantage of some moment in the use of static electricity is that the patient is not obliged to remove the clothing.

To this machine, which is the new Morton-Wimshurst-Holtz machine, manufactured by the Galvano-Faradic Company of this city, I have added my own inventions for producing currents. The machine is primarily a Holtz machine. Wims-hurst substituted rectangular glass plates for the round and stationery plates of Holtz, and I have added switch devices and the mechanism by which the currents discovered by myself are created and delivered.

For instance, we will now test the "static induced current," as I named it when I discovered it in 1881. We would now term it an oscillatory current. It has an enormous "frequency" or rapidity of oscillation or alternation. It is, of course, an interrupted current. I convey it through the bodies (makes the experiment) of ten of you at once, and you notice the peculiar diffusive, painless, penetrating character of the current, while at the same time your muscles are put into a state of rigid contraction.

As you know, I do not believe that there is any such thing as a true electric anæsthesia, but so

far as any current produces a partial numbness, a subjective feeling due to special sensory changes, this current possesses the quality to a higher degree than any other. In this respect it produces a relief superior to that produced by the much talked of "fine wire coils" of the ordinary medical induction apparatus. The current may be used exactly as one would use the current from the secondary of an induction coil. It may be regulated by a water rheostat. Those who have used it internally in gynæcological work speak highly of its soothing and numbing effects, and of its effects in producing desirable circulatory and nutritional changes. I have found it of great value in sciatic neuritis and in other forms of neuritis and neuralgia.

Even in electro-diagnosis I have found that the spark has a distinctive value, for by its aid we may ascertain at an earlier moment than is possible by present methods the onset of the degenerative process. I have deduced this law, viz.: *that the earliest sign of the reaction of degeneration is the failure of a muscle to respond to a spark which will set a corresponding normal muscle into contraction.*

This exposition is extremely elementary, gentlemen, but we all understand that its chief value to each one of you is that you take a personal part in the experiments and the administrations, and in examining the patients and apparatus.

I have, however, I trust, said enough to make it clear that in Franklinization we possess a valuable agency for the treatment of many important diseases and morbid conditions.—Dr. Morton, in *The Post Graduate*.

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### SURGICAL SHOCK.

Dr. Westmoreland has courteously insisted that I should occupy the time allotted to him with some remarks upon any subject of my selection. I regret his great hospitality deprives the Association of the pleasure of hearing his interesting paper, and, that it shall not entirely go by default, I shall in a few imperfect remarks address myself to his subject, which he will, of course, elaborate.

Surgical shock is the subject of the greatest possible interest to us all. It is not one of those subjects that unfortunately is brought into the proceedings of a general body like this, and is only of interest to a few. The specialist sometimes, in his presumption and egotism (I can say that, for I happen to be that sort of a fellow myself), assumes that the general audience is interested in his particular fad or theme. This paper, however, of Dr. Westmoreland's commands the interest of all. Shock, as the surgeon meets with it and considers it, is due to excessive or overstimulation of the sensory nerves. There are so many factors as

causal elements, it is often difficult to designate the special condition or circumstance giving rise to it. The injury itself to the vital tissues, the loss of blood, the circumstances attending surgical operation and mental impressions, all enter as causes. Profound shock, such as the surgeon is called upon to relieve, is a familiar picture to you all. You at once recognize it in the compressible and intermittent pulse, the hurried thoracic respiration or the deep sigh, the relaxed condition of the general muscular system, the profuse diaphoresis, the pinched countenance, the collapse of the curve of the lips, and the voluntary escape of urine and feces. It is important that we should differentiate this condition from concealed hæmorrhage, and in surgery of the abdomen especially should we ever bear in mind that the so-called secondary shock is in reality but a symptom of internal hæmorrhage due to imperfect surgery. Memory of one of my early cases haunts me still. The surgeon is sometimes called upon to relieve shock, but more frequently to prevent it. I was much impressed with the words of our eloquent orator, Dr. Benedict, when he said this morning there was much in mental impression. I believe there is much in impressing the patient with confidence in you. So deport yourself that the patient may feel that his trust is well founded. If the patient is thoroughly imbued with the idea that the operation is the last of him, and that the surgeon has small hopes of his recovery, such patient is sure to sustain the full measure of shock. The manner of administering the anæsthetic greatly influences shock. I think it wise to precede the administration of ether with the hypodermatic injection of morphia and atropia. I am one of those who believe in the minimum amount of ether that is necessary. I am fully aware that some surgeons use half a pound to a pound of ether during an ordinary operation, completely waterlogging their patient with it. I carry the patient under ether slowly, not forced nor strangulated nor drowned with it. The temperature of the operating room should be about 75°—a little uncomfortable, I grant you, for the surgeon, but better for the patient. With the introduction of the practice of aseptic surgery, it is quite the fashion for the surgeon to cover the patient with towels saturated with bichloride water. I know of no measure so deleterious to the patient—no step in the technique so certain to favor shock as this. You can accomplish all you wish with dry sterilized towels. The wet ones ruin the instruments, irritate the skin, and in cooling chill your patient. By the careful administration of the anæsthetic, by securing the proper temperature for the operating room, by keeping the patient dry and warm, with the extremities well wrapped in blankets, I think we may in a great measure prevent shock. Whether the operation be one in general or special

surgery, it should be expeditiously performed. While I deprecate hurried and incomplete methods, I think the habit of many surgeons, who stand and leisurely wash their hands to demonstrate the technique to students, is to be strongly condemned. The patient should receive absolute and undivided attention of the operator. "Chronic surgery"—that is, unnecessarily prolonged operations—is responsible oftentimes for shock. Unavoidable hæmorrhage may be the cause of shock; if so, we should take means to restore the patient at once. Sufficient attention has not been given to intra-arterial injections to overcome the acute anæmic at the time of operation. This is particularly valuable in railroad surgery. The three most important agents that we possess to overcome shock are, first, if due to hæmorrhage, injections of saline solutions directly into femoral artery; high rectal injections of hot saline solutions; if due simply to sensory disturbance, strychnine, digitalis and atropia are our remedies.

In regard to the propriety of operating when the patient is under shock, I do not know that this phase of the subject is within the province of this discussion. Railway surgeons have to contend with that more than any of us. It is the habit of some gentlemen to top off limbs as fast as they can get them in order to secure a better fee. I know, gentlemen, that this is so, and the practice should be deprecated. In the cases of mutilation of the limb, it appears to me it is altogether unnecessary to do anything except to provide against the occurrence of hæmorrhage, protect the limb and endeavor to prevent decomposition and infection and wait for reaction. If the patient does not react, he would have died anyway, and surgery would have received the opprobrium.

One word more and I have done. In abdominal operations there is one condition that often occurs, namely: a condition of profound nausea attended by shock. In that condition I have employed with the most satisfactory results two measures, namely: high rectal injection and irrigation of the stomach. In such cases I have washed out the stomach and resorted to rectal injections, and have always found that this method is productive of more good and quicker stimulation than any other.

I thank the Association for the courtesy it has extended to me, and wish to say this: standing here as I do, at the feet of the Nestor of Southern surgery—a man whose work has made for him and your State an everlasting name (I refer to Dr. Gaston), I think it is the height of presumption that I should further trespass upon your time.—Richard Douglas, M.D., in *Southern Med. Rec.*

## THE NEW TREATMENT OF DIPHTHERIA.

It seems likely that yet a new boon to humanity may ere long be anticipated from recent knowledge gained by experimental researches. Sir Henry Roscoe's interesting and able speech at the recent meeting of the National Health Society at Grosvenor House, directed public attention to the remarkable results obtained by Ehrlich, Kossel, and Wassermann in the treatment of diphtheria. A full summary of these was given in the *Epitome* of May 5th. They deserve to be put to the test in this country as soon as possible. Various investigations have recently been made, especially by Behring and Kitasato, on the antitoxins of tetanus and diphtheria, and they found that a substance was present in the blood serum of immune animals which had the power of conferring a certain degree of immunity in other animals, and even of arresting the disease when it had begun. These facts were applied by Tizzoni and Cattani to the treatment of tetanus in man, but with only imperfect results. The authors have followed the same lines in applying the method in the treatment of diphtheria, but they have taken special measures to obtain a particularly powerful antitoxin for the purpose. They began with producing immunity in goats by injecting increasing quantities of boiled cultivations of diphtheria bacilli, and the degree of immunity was subsequently further increased by injecting larger and larger quantities of extremely virulent cultivations of diphtheria bacilli. The serum of these animals thus contained large quantities of the antitoxin, and before going further they devised a method of measuring accurately the exact amount present. It had been found by Behring and Kitasato that if the poison and the serum antipoinson were mixed together in a test tube in proper proportions they neutralized each other, and that the mixture when subsequently injected into an animal was inert. They took as a standard of the poison a material of which 0.3 g. per 1,000 g. of the body weight was a certainly fatal dose. For animals of 200 g. to 300 g. weight they used ten times this amount, namely, 8 c.cm., and then added to this 2, 3, 4 g. etc., of the serum to be tested. The mixtures were then immediately injected into a series of guinea-pigs, and if the poison had not been completely neutralized this was evidenced in 24 or 48 hours by local infiltration at the seat of injection, and by loss of body weight. In this way the exact amount of any given serum required to neutralize 0.8 g. of poison was ascertained. As the unit of immunity they take serum of which 1.5 mg. neutralizes 0.8 g. of poison, and in the treatment of children they employed a quantity of serum containing an

amount of antitoxin representing 130 to 200 immunity units.

The investigations were carried out on 220 children suffering from diphtheria (proved by bacteriological examination) at all stages and in various hospitals in Berlin. The rough result is that of these 220 cases, of which 64 had already required tracheotomy before the treatment was commenced, 52 died and 168 recovered. Of the 153 cases in which tracheotomy was not performed only 22 or 14.3 per cent. died, the cause of death in these instances being in 8 sepsis, in 7 pneumonia, in 6 complications, such as paralysis and nephritis, and in one acute tuberculosis. Of the 67 cases in which tracheotomy was done, 30, or 44.9 per cent. died, the causes of death being in 4 sepsis, in 23 pneumonia, in 2 of sequelæ and in 1 of acute tuberculosis. Many of these cases were, however, admitted several days after the disease had commenced and when there was hardly any hope of saving them. The results are very striking if they are considered in relation to the duration of the disease. Six cases were admitted during the first 24 hours, and all recovered; 66 were admitted on the second day and only 2 died. Thus of 72 cases admitted during the first forty-eight hours only 2 died. Of these 72 cases tracheotomy was necessary in 9, and the 2 which died were 2 of those in which tracheotomy were performed. On the third day 29 cases were admitted, and of these 4 died; on the fourth day 39, of which 9 died; on the fifth day 23, of which 10 died. The percentages of recovery according to the day of admission after the disease commenced were therefore 100 per cent., 97 per cent., 86 per cent., 77 per cent., 56.5 per cent., etc.

In most of these cases only a single injection was made, but subsequently in bad cases several injections were employed, and the authors think that they might have saved some of those which died, especially from sequelæ (paralysis, etc.), if they had used repeated injections.

Before using the material it was first ascertained that it was quite innocuous and produced no effect when injected into a healthy individual. When injected in cases of diphtheria it was only when large amounts were employed that any immediate effect on the pulse or temperature was observed, but in a certain number of cases there was an almost critical fall of temperature and pulse on the day after the injection. The authors explain the fact that, as a rule, the temperature does not immediately fall, because it is only in the very early stage that the disease is pure, and it very soon becomes complicated with septic bacteria, which keep up the temperature, although the diphtheritic poison has been neutralized. The authors' conclusions are as follows: 1. The fate of the patients depends on the treatment during the first three days of the disease; hence the

serum should be injected as soon as possible after its commencement. 2. In mild cases the amount introduced should be at least 200 immunity units; in severe cases and in those where tracheotomy is necessary, 400 units. 3. The injections should be repeated on the same or the following day, according to the general and local symptoms; the total amount varying according to the severity of the case, from 500 to 1,500 immunity units. In 30 cases where repeated injections were employed, some of them very severe cases, 16 of them requiring tracheotomy, only 4 died. These four having had tracheotomy done, with little or no relief to the breathing.

Full details of the methods and cases will be published as soon as possible, and it is to be hoped that this method will be put to the test elsewhere as soon as possible. Already it is being tried in Paris with most satisfactory results.—Ed., *Brit. Med. Jour.*

#### THE USE AND ABUSE OF ARSENIC IN THE TREATMENT OF SKIN DISEASES.

When Erasmus Wilson so strongly advocated the usefulness of arsenic in the treatment of skin diseases, without discriminating closely, and only qualified his indorsement with the caution to be employed in its use, he but voiced the enthusiasm which at that time had placed arsenic upon the pedestal that it still tends to occupy. At the time of Bielt, Wilson, Cazenave, Schedel, Behrend, and others, the general practitioner had scarcely escaped from the simple classification of skin diseases into eczema, scrofula, and syphilis, with an occasional inspired diagnosis of psoriasis, herpes, or the like. It is hardly to be wondered at, then, that the general practitioner should welcome a remedy that had found favor with the dermatologists of the time in the very diseases under whose shelter he had found a refuge-diagnosis. Cazenave did not qualify his adjectives when he wrote of arsenic as an heroic remedy, meaning not radical but supreme. Almost every good thing in medicine has found its abuse in its early recognition, and soon a rational measure is made the excuse for enthusiastic excess, and the true value of a remedy is hidden by its indiscriminate usage.

Arsenic has drifted from its essential usefulness, and has become to a multitude of routine practitioners a panacea for all cutaneous affections. At the slightest intimation of a disturbance of the skin there is an echoing response in the physician's mental *vade mecum* of arsenic. In its various shapes and combinations, arsenic is administered for a variety of skin affections, many of which could in no rational way be



influenced by the drug. I have seen typical cases of the parasitic diseases of the skin, even the itch, treated for a long period with arsenic, as if painting the cellar would patch the roof.

The reaction has come, and it is a rational one at that. Instead of being employed to meet all possible and impossible indications, arsenic can be relegated to specific usefulness in therapeutic measures, and permits only of exceptional variations from its proper sphere. After long study and investigation, Dr. Fox, of New York, in collaboration with other dermatologists in this country, arrived at the conclusion that arsenic was not only of no service in some of the diseases in which it is often administered, but that it did positive harm, not only in the production of additional trouble in the skin, but by preventing the use of other and better remedies. Moreover, these investigations elucidated the fact that there was no series of cases in which arsenic could be said alone to have produced a cure.

With this kernel of sound meat for our consideration, I feel that a logical discussion of the uses first, then the action and abuses of arsenic, will, in some small measure, carry a germ of the reaction to those of you who have a *penchant* for arsenic administration, without knowing just why.

The action of arsenic is twofold—local and general. Topically applied, its action is first of all stimulant and irritant; and if sufficiently brought in contact with the surface it is caustic. Generally, arsenic is a nerve tonic, acting on the vaso-motor centres, and decidedly affects the peripheral nerve terminations. Its action on the spinal cord is irritant, and an overdose is evidenced by a widespread multiple neuritis. The evidence indicates that small doses check tissue change and decrease nitrogenous elimination, while large, toxic doses have the opposite effect. Arsenic is a direct stimulant to nutrition. It is alterative.

Upon the skin, the effect of ingested arsenic is much the same as that of the drug when used locally. There may result inflammatory redness, vesicles, pustules, etc., a sensation of heat, burning, pain, and there may be exfoliation of the epidermis in large flakes.

Arsenic is selective of diseased tissue, picking it out and acting on it. The drug is known to exercise its influence almost exclusively upon the epithelium of the skin. Its chief action here is upon the mucous layer of the epidermis. It has a similar action upon the mucous membranes, viz., increasing the hyperæmia. At first stimulant to the cell-forming elements of the rete, arsenic soon causes such a degree of overwork that the power of cell-production is finally

lost, or, as Jamieson well expresses it, it induces in them a premature old age.

In those skin diseases, then, in which an alterative action is demanded, arsenic is of service. Its stimulant action is indicated when there is a stagnation of the cell-forming element in the rete, or when this element is depressed by a chronic inflammatory process. Just how long and just how far this stimulation can be kept up must be judged from the degree of activity of the cell-production.

Arsenic must find some usefulness in the diseases of the skin of vaso-motor origin, whether acute or chronic, and this point should be determined before the drug is advocated or condemned. In deep-seated lesions of the skin, from what we have seen, arsenic is not indicated, and if used, the result would be questionable. Because of the tendency to produce hyperæmia, arsenic ought not to be given in acute inflammatory conditions, which the drug must necessarily make worse. On just the same account it is contra-indicated in the pruritic diseases, because, in itching, the chief underlying condition is hyperæsthesia, whether in its common signification of an excessive irritability of the sensory nerves, or in the sense of an excess of an engorgement of sensation. The attendant irritation and subsequent hyperæmia make itching persistent, and arsenic would only add to the production of the agony.

It is becoming more and more the practice of dermatologists to treat cutaneous diseases according to their pathology. Subjective symptoms, of course, are met, as in other diseases, but the etiology is investigated, and the treatment based on a pathologic plan.

In the parasitic diseases, the most effective antagonist to the special parasite is selected for use; in the pustular, or the coccogenous diseases, as Hyde has recently called them, anti-septic measures are employed locally, while, internally, anti-pyogenic remedial agents are administered. When there is an acute inflammatory condition in or on the skin, the points of attack, both locally and internally, are through the reduction of the inflammation.

The diseases for which arsenic seems to be especially useful are few. At the top of the list stands psoriasis, then chronic eczemas, and the lichens, with some of the hydroa.

With many dermatologists arsenic is pre-eminently the essential treatment of psoriasis. According to Brocq, Vidal used arsenic for a long time, to the exclusion of other medication. He administered the drug in large doses for a long period of time, and at the cost of systemic intoxication. In recommending arsenic in chronic psoriasis, Brocq apologizes for its accidents, and warns the physicians to guard against the pos-

sible inconveniences of treatment. Pye-Smith commends the use of arsenic in psoriasis, but suggests that it be carried to tolerance, then the dose dropped to the original small dose, and the same method of administration resumed. Duhring says that arsenic is unquestionably of great value in psoriasis, but should be withheld until the disease is settled in its course. Weyl and Anderson, on the other hand, state that the more recent the eruption, the more readily, as a rule, psoriasis yields to arsenic, while chronic and relapsing cases are more rebellious.

It is noticeable that arsenic is of service in some cases of psoriasis, while in others the results are negative. While the etiology of psoriasis is still *sub judice*, and the neuropathic vies with the parasitic and the syphilitic element as causative factors, it is difficult to determine what the reason should be for the discrepancies in the effect of treatment. It must be remembered, however, that psoriasis is a self-limited disease, tending to get well of itself. It recurs periodically and has seasons of recurrence, be it winter or summer, spring or fall. Some cases get well in spite of all treatment, and it is questionable if arsenic plays any particular part in the cure. Few cases of psoriasis are treated internally alone, and the external treatment may deserve the credit. Granting, however, that arsenic is capable of removing the disease in given cases, and fails in others, it must act in the first instance, if the therapy of the drug as acknowledged is correct, through its effect upon the peripheral nervous system first, or by its direct local presence. Its failure to act in one of two apparently parallel cases would indicate that this nervous element was lacking in the case that failed to respond to arsenic.

The pathology of psoriasis gives evidence of cell-exudation and cell-proliferation. There is moderate inflammation, with increased development of the layers of the rete. There is involvement of the papillæ of the corium, and a consequent and enormous increase in the horny cells of the epidermis, from the rapid proliferation of the aborted cells from the mucous layer. Auspitz contends that psoriasis is not inflammatory, but due to an anomaly of the process of cornification, or the keratinization of the epithelial cells. The etiology of psoriasis is unknown, the pathology still in some question, and the treatment thoroughly empirical. Arsenic occupies a strong place in the list of remedial agents, and seems to act in overcoming the cell-aborting process of the rete by stimulating a healthy activity, while the general tone of the skin is raised through the stimulating effect of the arsenic upon the peripheral nerve-plexuses and the nerve-endings themselves.

The term lichen really includes but two types of

a chronic inflammatory eruption consisting of papules. In lichen ruber acuminatus the papules are conical and tend to coalesce. In lichen ruber planus they are flat, square, angular, and vary in color from pink to violet, although sometimes white. The essential pathologic process in both types begins in the corium. In lichen acuminatus the process is chronic and inflammatory, beginning in and around the hair-follicles, with a consequent enlargement of the sheaths of the follicles through a marked cell-development. In lichen planus the process begins around a sweat-gland, usually in the upper part of the corium, resulting in a subsequent thickening of the rete and enlargement of the papillæ by a down-growth of the inter-papillary processes. The etiology of both, like that of psoriasis, is still an open question. That the distribution is suggestive of a nervous origin, and the itching (paroxysmal in type) suggests a nerve-hyperemia is about all there is in evidence. The indications for treatment are similar to those in psoriasis. In the lichens, however, the general health is profoundly influenced and nervous symptoms are present, notably nervous exhaustion, hysteria, and the like. Arsenic fails here, as in psoriasis, in many cases. In chronic cases the drug is certainly useful. It must act in hastening the shedding of the excessive cell-proliferation by controlling the nerve terminals.

Chronic eczemas and eczemas of reflex nervous origin form another group of diseases treated by arsenic. It should go without saying that in the acute types of eczema, in which there is edema, infiltration, vesicles, redness and itching, all evidences of an acute catarrhal condition, arsenic is absolutely contra-indicated. When this condition has thoroughly subsided, leaving behind a marked cellular deposit, with enough swelling, redness, itching, and scaling to determine its eczematous nature, then arsenic may be of service. Stimulation is the essential of the treatment, and by re-awakening the dormant cells of the rete, already on their way to connective-tissue degeneration, arsenic finds its usefulness.

Pemphigus and the tropho-neurotic diseases, with bullous eruptions, are favorably affected by arsenic. Nervous lesions are often found associated with pemphigus. These may be either vasomotor or tropho-neurotic; in either case constituting an indication for the administration of arsenic, one of whose properties is an influence upon the vasomotor center.

Dermatitis herpetiformis belongs to the same group as pemphigus, being associated, according to Elliot, Duhring, and others, with some reflex neurotic causation. Shock, grief, anxiety, overwork, pregnancy, and the climacteric in women, are among the important factors. Crocker classes dermatitis herpetiformis with hydroa, although the eruption is varied in type, and presents lesions

of papular and uticular tendency, but more commonly characteristic bullæ. Most observers accept the neurotic factor in the etiology and confess the uncertainty of the pathology. The distribution and the resemblance to the eruptions of pemphigus, with the pronounced symptoms of nervous lesions, evidenced by a variety of manifestations, depression, melancholia not uncommonly, and the tendency to recur under conditions of nervous strain, all point to the neurotic factor. On these grounds, arsenic is given, and is found useful in many cases.

The diseases named form only a small part of a long list of cutaneous affections, but include those conditions which, from a rational standpoint, should yield to the accepted therapy of arsenic. They are but a fraction of the diseases for which arsenic is prescribed.

We have seen that arsenic is positively contra-indicated in acutely inflammatory diseases, excepting those of bullous type, distinctly referred to a vasomotor or nervous origin. Arsenic increases the hyperemia of the skin, and in cases of idiosyncrasy, or under prolonged administration, is capable of producing many local disturbances of the skin. Devergie was the first to announce the fact that cutaneous lesions may be caused by the internal administration of arsenic. These skin-manifestations may take the shape of papular, urticarial, vesicular, erysipelatous, and pustular eruptions. To these may be added an erythematous or scarlatiniform eruption.

According to Hutchinson, herpes zoster may be induced by the ingestion of arsenic, and in subjects predisposed to carcinoma arsenic may act as the determining cause. Boils and carbuncles occasionally result.

Among the inconveniences, as Brocq calls them, of arsenic administration, there is often marked brownish discoloration of the skin occurring on the face and various parts of the body. This occurred in two cases that came under my own observation. In one patient, a psoriatic subject, arsenic has been given for several relapses, and had last been administered three years before I saw the patient. There were numerous pigmented patches on the extremities, which seemed to have no tendency to disappear. In the second case, one of chronic eczema, Fowler's solution had been given for two months previous to my seeing the patient. There was marked brownish pigmentation in patches over both legs and thighs, which persisted, and was still present six months after the eczema was cured. Only recently Carrier has reported a case of pigmentation of the whole body occurring suddenly during the treatment of a case of psoriasis, and further complicated by warty growths upon the palms and soles, all following the internal use of arsenic. Mathieu has within a month reported a case of chronic arsenical poisoning in

which the skin of the patient was bronzed, or slate-colored, in various regions of the body. On the palms and soles, as in Carrier's case, there was marked hyperkeratosis. These discolorations are attributable to the stimulated action of the prickle cell layer, in which the pigment-cells are found, and, according to some authorities, in which the pigment is said to be formed.

These, then, are some of the chief accidents of arsenic administration. Notwithstanding these, it is advisable to use the drug in selected cases. But, in the face of these, is it justifiable to carry on a systematic use of the drug in diseases in which the indications are not for it or are positively against it?

Arsenic is popular in the treatment of acne, notwithstanding the fact that the drug has no action on the deep layers of the skin, while acne is essentially a disease due to inflammation of the sebaceous glands or hair-follicles, which are found only in the reticular layer of the corium or in the subcutaneous connective-tissue layer.

Arsenic is often given in the erythemas, both simple and exudative, in spite of the evidence of the presence of acute inflammation in the skin, and marked exudation, which the use of arsenic tends only to increase.

Urticaria is essentially an exudative disease, attended with œdema, which is the pathologic origin of the clinical evidence, namely, the wheal. The vasomotor element in the etiology might excuse the administration of arsenic, but the clinical symptoms, with the pathology, would more than counterbalance this. Aside from increasing the exudate, arsenic tends to produce œdema, and in overdoses is itself responsible for an urticarial eruption.

Malaria, exposure, and the ingestion of certain medicaments, are among the causes of herpes zoster. The direct occasion of the eruption is a peripheral neuritis. How often is arsenic given for this condition, although contra-indicated by its physiologic action, because the drug is a stimulant to the peripheral nerve-endings, and in tonic doses, or given for a long time, it produces this very class of eruption. Niessen found ten cases of herpes in 557 cases of psoriasis treated with arsenic, while not one case of herpes occurred in 220 cases treated with potassium iodide.

I have referred to the indiscriminate use of arsenic in parasitic diseases of the skin, which can in no way be affected by the drug. We cannot deny that in some such diseases of the skin arsenic is of undoubted service, but these cases must be selected. Even in those diseases in which there is some specific and rational effect expected from the drug, there is in many instances conspicuous failure. It must be remembered that in many cases of cure attributed to arsenic, some other

element in the external or internal treatment may be responsible.

When dermatologists themselves confess that the accidents from arsenic form a large proportion of the drug-dermatoses, and the patient is often afflicted with a permanent souvenir of large and heroic doses of the drug, while the skin disease aimed at pursues its course not much affected, we should call a halt and question the value of the drug and its indiscriminate use.

We must arrive at the conclusion that instead of being the first, arsenic should be one of the last remedial agents to be used in the treatment of diseases of the skin, and when selected it should only be used in chronic diseases with a general distribution and in diseases associated with a neurotic element.—Dr. Dyer, New Orleans, in *Med. News*.

### IS PYREXIA A FRIEND OR AN ENEMY?

The etiology, significance, and treatment of pyrexia is a stock subject of observation and discussion. It comes up again and again with the persistence of a poor relation, yet the opportuneness of its importunity can never be denied, seeing that we are still without a working hypothesis in respect of the causation and significance of fever. Should we, like our forefathers, see in fever a humour akin to a demon, fit only to be combated and exorcised by all and every means in our power, or ought we, as more recent observations would seem to indicate, to view fever in the light of a willing ally against the marauding and ubiquitous bacillus with its train of excrementitious toxins? That is the question, as Shakespeare once observed under slightly different circumstances. If pyrexia did not have some beneficial effects as in some way an obstacle to the bacterial invasion it would not, as was urged by an ingenious but somewhat too hypothetical speaker, have been perpetuated in the animal organism. Most of Nature's reactions are purposive, and, as we have failed in our efforts to suppress fever, we may well ask ourselves whether or not the rise of temperature which characterises all acute specific affections does not, like abscess formation in response to local irritation, tend to prevent the further elaboration of lethal processes? We know that, as a general rule, pathogenic bacilli can best be cultivated at the normal or a slightly lower temperature. We know too that variations of temperature within comparatively narrow limits seriously interfere with their development and proliferation. This fact alone affords matter for reflection. May it not be that the stimulation of the thermogenic centres is one of Nature's means of combating the evil genii in the shape of microbes which secrete the poisonous toxins, with the elaboration of

which the pyrexial process is so closely associated? Is pyrexia, and, if need be, hyperpyrexia, not an attempt to sterilise the blood and the tissues of the agents that are working havoc therein? In considering the question of the thermometric phenomena associated with the specific fevers, we must, indeed, bear in mind that a certain, comparatively high temperature is as natural to a given diseased condition as is a normal temperature in health. A man afflicted with a pneumonia may really be more ill with a low temperature than when he presents the pyrexial phenomena usually associated with that disease. It is obvious on the face of it that the therapeutical indications in respect of fever are less simple and straightened than they appear at first sight, and these considerations serve to emphasise the difference in the action of the two great classes of antipyretic agents—those which act directly on the thermogenic centre, and those which merely reduce the surface temperature, and prevent the accumulation of heat within the organism. If a rise of temperature really represents an effort on the part of Nature to lessen the biological activity of the invading organs, we must be rendering sorry service by diminishing the irritability of the thermogenic centre in response to the stimulus given by the enemy. The result of antipyretic treatment, strictly so-called, tends to support this view. Professional opinion at the present time tends to discount the indiscriminate use of drugs of the antipyrine class for the purpose of reducing temperature. The patient, after the artificially-induced fall of temperature, is often worse off than when the fever was in full swing, and grave symptoms often accompany, and may even be said to measure the efficacy, of the antipyretic medication. An exception may, perhaps, be made in favor of drugs of the quinine-salicylic group which have a thermolytic effect in virtue of their bactericidal action. Quinine, for example, is most efficacious in suppressing malarial fever when given some hours before the attack, at a time when the temperature is subnormal. It is, therefore, less a thermolytic than a microbicide. It is hardly necessary to promise that purely clinical observation cannot be implicitly relied upon, for the data which it affords are conflicting, incomplete, and inconclusive. Our forefathers bled for fever, and in so doing they were, possibly unconsciously, acting on strictly logical principles. To withdraw a certain proportion of the microbe-laden blood from the organism is to reduce *pro tanto* the disease-producing causes, just as in local tuberculosis we seek to minimise the risk of generalization by the ablation of all accessible foci of infection. Venesection is out of date, and medicinal antipyresis has taken its place, but there are grounds for suspecting that the results are, to put it mildly, not more satisfactory, and public

opinion is just now somewhat hostile to this empirical meddling with the action of the vital centres. No such difference prevails in respect of what may be termed the external method of thermolysis—by cold baths, wet packs, and the like. Any evil effects dependent on recourse thereto can easily be avoided or averted by the careful application of common-sense principles. In future, it may well be that true wisdom may consist in treating fever as a valuable friend and ally rather than as an enemy to be fought at the expense of the organism.—*Med. Press.*

### A CASE OF ELECTRIC SHOCK OF ONE THOUSAND VOLTS; INSENSIBILITY OF PATIENT TO PAIN; RECOVERY.

I am indebted to the courtesy of my colleague, Dr. W. M. L. Coplin, for the privilege of reporting the following case:

On the 20th of April, 1894, J. R., aged forty-four years, while engaged in repairing broken wires for the Bell Telephone Company, grasped the ends of a wire that had crossed an electric light wire, conveying one thousand volts. He received the full force of the current through his body, and was immediately rendered unconscious. He was thrown violently to the ground, and could not be released until the current was broken by a fellow-lineman, who cut the wires apart with a hatchet.

The man was brought to St. Mary's Hospital at 11 a.m., within half an hour of the accident, and I saw him a few minutes after his admission. He was in profound coma, with pupils widely dilated and irresponsive to light, breathing stertorous, face pale and bathed in perspiration. About ten minutes later he vomited, and then became wildly delirious, so that it required the combined efforts of three men to keep him in bed. He moaned and cried incoherently, and tonic and clonic convulsions of a severe type succeeded each other with great rapidity. At this time we were unable to take his temperature on account of his extreme restlessness, but to the hand it appeared about normal. His respirations now lost their stertorous character, and became more of the Cheyne-Stokes variety, averaging about ten per minute for two hours after his admission. The pulse was eighty per minute, of high tension.

At 11.40 a.m., the man was given morphin, gr.  $\frac{1}{4}$ , by hypodermic injection; and as the delirium and convulsions did not abate, the injection was repeated at 12.10, and soon afterward he gradually quieted down. About 1.30 p.m., as his respirations were alarmingly feeble, he was given strychnin, gr.  $\frac{1}{30}$ , by hypodermic injection, with

excellent effect. At 2 p.m., he fell into an apparently normal sleep, from which he awoke four hours later, conscious, but slightly dazed, and feeling, as he expressed it, "tired and sore all over." On my visit to the hospital next morning I found that he had slept well during the night; his temperature was 98.8°, his pulse 72, his respiration 18. He complained of pain from a number of severe burns that he received during his contact with the wire. These burns were distributed irregularly in lines over the back, arms and legs, and evidently were caused by the intensity of the current, as the clothing which covered the affected areas showed no signs of having been scorched.

On questioning the patient as to the nature of the accident, he remembered perfectly all of the incidents of his morning's work up to the time when he grasped the wire that conveyed the shock through his body. After that moment he had not the slightest knowledge of what had occurred, and did not suffer the least pain until he awoke at 6 p.m., as already stated, to find himself in bed in the hospital.

The subsequent history of the case was uneventful. The patient made an excellent recovery.

In view of the employment of electricity by the authorities of certain States for the purpose of putting condemned criminals to death, the facts of the case related are of interest. Dr. J. W. Brown has published the history of an electrocution that took place at the prison at Auburn, N. Y., in which the condemned man received a voltage of 1,260 through his body for fifty-six seconds, and, being apparently dead, he was released from the straps. To the horror of those present, he gasped for breath and began to revive. He was placed again in the chair, but the current would not work, so that he was removed to the hospital, and developed a train of symptoms precisely similar to those observed in the case that I have reported. A second contact an hour and fifteen minutes later resulted in death in forty seconds. The case attracted great attention at the time, from the supposed agony of the condemned man, who was regarded by the newspapers as a hero on account of his sufferings. According to the statement of our patient, he was absolutely insensible to pain from the instant he received the shock; even the actual discharge of the current caused him no suffering; and were it not for the burning of his skin, he would not have been aware that he had met with an accident.

While it is to be regretted that the public is greatly exposed to accident from contact with currents of high tension on account of the almost universal employment of electricity as a motive and lighting power in our large cities, it seems to me that, so long as capital punishment has to be enforced as a legal penalty, the electric current, properly applied and of sufficiently high tension,

is the most humane agent yet devised for putting condemned criminals to death.—P. S. Donnellan, M.D., L.R.C.S., in *Therapeutic Notes*.

### SUPPURATION.

The discovery by Ogston of micrococci in the pus of abscesses gave rise to the belief that suppurative inflammation was quite distinct in its nature from the more simple forms of inflammation, that it was a specific disease dependent upon a definite cause and not occurring without its agency. The researches of Koch into the infectious processes of wounds, and the more careful study of bacteria made possible by the use of solid culture media, however, disclosed the fact that several distinct species of bacteria were associated with pus-formation, and Koch consequently asserted that suppuration could not properly be considered a specific disease. Subsequent study has confirmed this opinion, and has demonstrated an etiological relationship to suppuration of a much larger number of bacteria than was at first supposed. The various problems connected with the occurrence of suppuration have thus become more complicated and have been the subject of much research during the past few years. The results of this study are carefully reviewed by Kurt Müller in a recent number of the *Centralblatt für Bakteriologie und Parasitenkunde*, 1894, xv., Nos. 19, 20 and 21.

While admitting that in a few instances inflammation with pus-formation has been produced experimentally without the agency of bacteria, Müller regards this to be of no practical importance, since suppuration as it occurs in man is unquestionably always the result of the action of micro-organisms. But the germs associated with suppuration are not the only factor to be considered in the study of its etiology, for the accumulation of the inflammatory products depends also upon the vital activity of the tissue upon which the influence of the germs is exerted.

The importance of the tissue in determining the occurrence of suppuration is shown by a number of circumstances. Thus, many germs occasionally producing suppuration do not habitually do so, apparently only acting in this way when the state of the tissue is such as to react in an unusual way to their influence. The bacillus typhosus, the bacillus coli communis, and the micrococcus tetragenus are examples of germs occasionally acting to cause suppuration in this way. Again, it is not unusual to find inflammation of less intensity than the ordinary suppurative inflammation caused by the germs which usually cause suppuration in its most virulent form. The staphylococcus pyogenes aureus not infrequently causes simple inflammation (pleurisy

with effusion), or may cause only areas of tissue necrosis at the points of its lodgement in the body. Another interesting fact bearing upon this question of the part played by the tissue in suppuration is that its susceptibility may change with great rapidity. A case illustrative of this is cited by Müller. A man who, two weeks before, had suffered from a suppurating wound of the finger, presented himself with diffuse infiltration and redness about the shoulder of the same arm. When incised a considerable quantity of serous exudate escaped, but no pus. Cultures of this serum showed only streptococci. The wound was dressed aseptically. In three days the man died, and at the autopsy the whole region previously occupied by a serous exudate was found to be infiltrated with pus, which still showed only streptococci. It would seem that in this case the tissues must have undergone a change of susceptibility.

A change of susceptibility is also observed with change in age of the individual. This is exemplified by "spontaneous" osteomyelitis which is comparatively rare after the twenty-fifth year. It is also strikingly illustrated in the case of rats, which while young are exceedingly susceptible to anthrax, but when adult show great immunity to it.

It is evident, then, that the condition of the tissues must exert an important action in determining the occurrence of suppuration.

The germs which have thus far been described as at times giving rise to suppuration are: Staphylococcus pyogenes aureus, albus and citreus; streptococcus pyogenes, staphylococcus cereus albus, streptococcus cereus flavus, micrococcus pyogenes tenuis, micrococcus tetragenus, pneumococcus, bacillus pyogenes fetidus, bacillus typhosus, bacillus coli communis and bacillus pyocyaneus. Of these the staphylococci, streptococci, and the pneumococcus are by far the most frequent causes of suppurative inflammation. To these Müller would add, and apparently with justice, the bacillus tuberculosis, the gonococcus and actinomyces.

Nothing can be more certain, then, than that suppuration cannot be regarded as a specific process. It results from the action of a great variety of micro-organisms which are profoundly influenced in this action by varying states of the tissues. It must, therefore be considered as nothing more than an intense form of exudative inflammation in which peculiar conditions of bacterial activity, or of tissue susceptibility, or of both, lean to an inordinate emigration of leucocytes and necrosis of tissue.—*Am. Jour. Med. Sciences*.

Prof. Keen says gall-stones that escape from the gall-bladder will often be the cause of obstruction at the ileo-cæcal valve.

## INCONTINENCE OF URINE IN CHILDREN, TREATED WITH ATROPIA.

When the smallest physiological dose of atropia is administered the only symptom is dryness of the throat and mouth, possibly some disordered vision. When a larger amount is given this dryness becomes more intense and is associated with redness of the fauces, dilated pupils, disordered vision and possibly diplopia. Often from the first, certainly after a short time, in all cases the heart's beat becomes rapid, and after a large dose of the alkaloid, exceedingly rapid, often accompanied by a peculiar red flush on the face and neck, which may spread over the whole body. In very severe exhibitions of the rash, desquamation of the skin sometimes follows. Intelligence may remain perfect, but there is generally some lightness of head, giddiness and confusion of thought, as well as a staggering gait. Even with doses that are medicinal there are spectral illusions. Drowsiness is not a general or at all characteristic symptom. When a decidedly poisonous dose of belladonna or its alkaloid has been taken, all these symptoms are intensified; sometimes the patients are exceedingly violent and convulsions may appear, followed by stupor and paralysis. Lividity of the face, showing imperfect aeration of the blood, is not seen in atropia poisoning, except in a stage of most imminent peril. Death is preceded by marked heart and respiratory failure.

Upon the muscular structure of the heart itself atropia acts as a depressant, but it would have to be taken in very large amounts to be apparent. On the other hand atropia acts, it is claimed, on the cardiac nerve centres as a stimulant, and unless taken in very large amounts does not destroy excitability of these nerves.

Evidence is directly in favor of the fact that atropia in small doses contracts the capillaries, and only when poisonous doses are given do they become dilated. Atropia acts on the peripheral filaments of the nerves, it is mainly eliminated by the kidneys, and its local action on the nerve filaments of the bladder, I have no doubt, is one of the modes of relief for incontinence, when the interior of the bladder is the seat of the trouble. We are all familiar with the local action of belladonna to relieve pain as in myalgia, lumbago, pleurodinia, etc.

In the last eighteen months I have treated five or six cases of nightly incontinence, all of whom responded satisfactorily to the atropia treatment when administered to its full physiological effect. In all my cases I used the metric granules manufactured in Philadelphia, commencing with the  $\frac{1}{100}$  of a grain three times per day, increasing the dose gradually for the first two days. After that the increase was more rapid until there were some

decided symptoms of distress; even then the dose was continued cautiously and the toxic symptoms would often disappear without decreasing the amount. In only three cases did I have to gradually decrease the dose that was being administered. It is also necessary in the treatment to require the child brought under your daily observation to consider the propriety of increasing, maintaining or decreasing the medicine. I find we cannot intrust to the parent the dose that is to be administered, and it is not improbable the mental effect of visiting the doctor every day is beneficial.

In one case a boy *æt.* nine years had wetted the bed every night from birth, and seldom less than twice a night. The first dose administered was  $\frac{3}{100}$  of a grain; it produced such nausea with vomiting and general redness of the surface, that his parents were alarmed. I decreased the dose slightly for several days; the child that week soiled the bed only three times. The dose was then gradually increased daily with the result, at the end of the second week of a slightly improved record. The dose at the end of the third week had gotten to  $\frac{1}{100}$  of a grain three times per day, with the result of additional improvement. The atropia was increased to  $\frac{1}{80}$  of a grain before the child was cured. Singularly to state even at this dose, although the pupils were fully dilated, he never complained of his vision or any other unpleasant symptom. Nor did any of the children that I have treated though they played out in the sunlight. I will state with regard to this case that I treated the mother for typhoid fever while she was pregnant with this child. At birth it was fairly well nourished. It was born with a cleft palate and the eyes, as the child developed, showed a want of coördination; its digestion for a bottle-fed child was good. Two nurses were necessary as one was unable to attend it on account of its sleeplessness. I rarely gave it an opiate. Bromide and paraldehyde were given with only partial relief. I then put the child on the hyperphosphate, it immediately acted like an opiate and the child was a good baby from that on.

The second child was eight years of age, a robust, healthy looking boy who had been soiling the bed for five years. He was relieved very promptly and I withdrew the medicine abruptly. The incontinence returned in a few nights, and I had to recommence the treatment. The medicine was then gradually withdrawn, and the cure was completed.—Abstract in *Med. and Surg. Rep.*

Prof. Wilson says the chill which, as a rule, is present at the outset of an attack of pneumonia, often does not manifest itself in children, but is supplanted by nervous symptoms.

## A NEW BLOODLESS OPERATION FOR THE EXCISION OF HÆMORRHOIDS, WITH HEALING BY FIRST INTENTION.

In the domain of surgery no field has been fought over more energetically in modern times than that which pertains to operations on the rectum, and particularly to the removal of that most important, because so common and distressing, ailment, hæmorrhoids. The most valorous determination to rescue its treatment from the uncertainties and vagaries of empiricism and to establish it on sound surgical principles has actuated the advocates of the various methods now in vogue.

Believing that a process of dealing with hæmorrhoids, evolved from my own conceptions after many years of contemplation and trial in devising means to harmlessly control hæmorrhage while excising the tumors and redundant folds of the rectum, and likewise to hold in perfect and undisturbed coaptation the edges of the incision, will receive favorable consideration from intelligent and unbiassed promoters of advanced surgery, I will, without further consumption of valuable time, enter *in medias res* with as little vexing of the polemics of the subject as possible.

The following is the *modus operandi*: With a lateral or dorsal decubitus, as convenience or expediency may decide, and with an aseptic perineum and dilated sphincter, gently and smoothly clamp the base of the hæmorrhoids with suitable forceps, so as to parallel the approximated surfaces and free them from folds and other inequalities; then, having left room between the clamp and adjacent healthy tissues, apply on either side a sufficient length of rubber tubing five or six millimetres in diameter, with a lumen of one millimetre, and secure with aseptic catgut after the general manner of the quilled suture. To assure accuracy of adjustment, the pieces of tubing should be of the same length, and have corresponding marks six or eight millimetres apart, indicating the locations for the sutures. Each tube should have its extremities hermetically sealed by the sutures there tied, thus adding a degree of pneumatic elasticity to that possessed by the rubber. All the sutures should be preapplied or tied beforehand to one of the pieces of tubing, with threaded needles in each of the opposite loops, ready for transfixing the tissues and tying over the other piece of tubing. Remove the forceps, and excise the tumor close to the rubber tubing with flat scissors. I have sometimes varied the fixation of the tubing by using one piece doubled upon itself and drawn together with a continuous suture, made to assume an advancing figure of eight, or double spiral, by passing the needle always close to the forceps and the thread

always encircling the tube from below upward; the perforations then are in one line and the tension evenly distributed. Where many stitches are to be taken, it saves the time consumed in tying. This completes a bloodless operation, for the elasticity of this welted suture supplies sufficient pressure to prevent all hæmorrhage, and maintains in perfect and uniform contact the margins of the wound without endangering from local asphyxic and necrotic conditions consequent to rigid clamping, and without interfering with the plastic exudation of repair by first intention.

The further dressing of the wound consists simply in passing a strip of moist borated gauze into the rectum, leaving an end protruding from the anus. The catgut sutures soften in due time and permit the tubing to pass away, while the flexibility of the latter has adapted itself to the environments, with the minimum of annoyance to the patient.

What the Esmarch bandage is to amputations, the same is this elastic quilled suture to the removal of hæmorrhoids or other angiomas from surfaces sufficiently lax to allow of approximating folds of sound tissue at their base. Compared with the ligature, it possesses all its advantages with none of the disadvantages attendant upon the distorted, puckered strangulation of the parts, followed by sloughing and ulcerative healing. The clamp and cautery also leave surfaces of crushed and lacerated tissue which the hot iron at best must transform into a burn of the second grade, with inevitable cicatricial contraction. Whitehead's operation is prolix, tedious, and wasteful of the vital fluid. The injection of carbolic acid is unreliable and precarious, save in expert hands, and even then we must wait for nature to expel the mummified mass and fill it with granulation before the cure is perfect. The accidents and lack of success that have been known to attend these various methods are apologetically attributed by their champions to "unskillful hands." I feel confident that this new method will succeed with those who make no claim to extraordinary cleverness. It approaches the ideal of operative procedures, and attains the desiderata of all surgery, speedy and clean removal of the condemned part, economy of blood, and primary union.—H. M. Bishop, M.D., in *Ther. Gaz.*

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### MEDICAL NOTES.

Prof. Keen says the bacillus of tetanus is the most virulent of all known bacilli.

Chloral, Dr. Da Costa says, is a dangerous drug to administer to old drunkards.

Prof. Hare says the oil of copaiba is not as therapeutically active as the balsam of copaiba.



Appendicitis, Prof. Keen says, occurs about three times as often in the male sex as in the female.

Prof. Hare is of the opinion that some cases of pneumonia can be aborted if they are seen early enough.

Prof. Montgomery says lacerated perineums sewed up during the period of lactation often do not heal well.

Convulsions at the outset of pneumonia, Prof. Wilson says, are of very common occurrence in children, taking place in almost one half of all the cases.

According to Prof. Parvin, if after eighteen hours from time of delivery the mother does not voluntarily empty the bladder, she should be catheterized.

Prof. Parvin does not think that hamamelis is a safe remedy to administer to a woman in the treatment of hæmorrhoids, if she be in a pregnant condition.

For enlarged thyroid glands, Prof. Parvin recommends the local application of an ointment consisting of from twenty to thirty grains of the biniodide of mercury to half an ounce of simple ointment.

In any case of injury to the head in which a patient vomits blood, Prof. Keen says a fracture of the base of the skull will be found in nine out of every ten cases. The vomited blood will be blood that has trickled from the fracture and has been swallowed by the patient.—*Coll. and Clin. Rec.*

A CASE OF TRANSPOSITION OF THE VISCERA.—It occurs to me that the readers of the *Medical Record* might be interested in hearing of a rather unique case, at present in Lakeside Hospital, Cleveland, in which the positions of the internal viscera seem rather mixed.

John S., a German laborer, 25 years of age, entered the hospital about three weeks ago complaining of loss of appetite, weight, and strength. He had eight brothers and sisters, all of whom died while young, and he has always been delicate himself, and unable when a boy to knock around as his fellows did.

Upon examination, this unusual state of affairs was found: His heart is normal in size and correct in position, except that it is on the right side. The apex beat is in the fifth intercostal space, and one inch from the nipple, toward the median line; his liver is normal and in perfect position, except that it is on the left side; while his stomach seems to have changed places with his liver, and is on the right side. His spleen could not be made out.—H. J. Herrick, M.D.

TREATMENT OF VAGINITIS.—Lutaud (*Revue Obstétricale et Gynécologique*). The treatment of vaginitis differs little, whether it be simple or specific. The physician should, above all, consider the *acute* and *chronic* vaginitis in the therapeutical point of view.

(a) *Acute Stage*.—Here the speculum should not be employed. The patient should be kept as quiet as possible, and walking, coitus, and all physical exercise forbidden. Frequently repeated injections (every six hours) with Esmarch's douche with two litres of a one per cent. solution of boric acid. Emollient injections, such as starch, flax-seed meal, or decoction of poppy heads, may also be employed. If pain is severe, one of the following suppositories is given every evening:

R.—Ext. opii, . . . . . centigm. i.  
Ol. theobrom, . . . . . gms. iv.  
M.—Ft. supposit. No. 1.

This may be replaced by a little injection containing fifteen drops of laudanum. For bladder symptoms (tenesmus, pain during micturition), poultices, with laudanum sprinkled over them, bromide of potassium, emollient drinks, and alkaline diuretics are to be prescribed. It is well in these cases to discontinue wine, but light tea may be taken.

(b) *Chronic Stage*.—An injection three times a day is to be given with one of the following:

R.—Acid carbol., . . . . . gms. v.  
Alcoholis, . . . . . gms. x.  
Ess. thym., . . . . . gtts. xx.  
M.—For two quarts of water.  
R.—Hydrarg. bichlor., . . . centigrams. xxv.  
Acid. tartaric, . . . . . gm. l.  
M.—For two quarts of water.  
R.—Potas. permanganat. . . . . gms. x.  
Ac. dest., . . . . . gms. cc.  
M.—A tablespoonful for two quarts of water.

This last is the best remedy for gonorrhœal vaginitis; if it did not soil linen, it would be perfect. In rebellious cases, or when it is necessary to act rapidly, a Sims' speculum is introduced and the vagina is painted with a solution of nitrate of silver (two grammes in thirty grammes of water).

Before withdrawing the speculum, a large tampon imbibed with the following is introduced:

R.—Acid. tannic, . . . . . gms. ii.  
Cocain. hydrochlorat., . . . centigrams. x.  
Glycerini, . . . . . gms. cxx.

The tampon should be left in place for two days. No matter what may be the treatment applied in chronic vaginitis, the cure may always be hastened by the vaginal dressings, which isolate the parts and absorb the secretions. Simple dry cotton tampons are good, but when made with iodoform or salol gauze are preferable.—*Annals of Gynecology*.

# THE CANADA LANCET.

A Monthly Journal of Medical and Surgical  
Science, Criticism and News.

Communications solicited on all Medical and Scientific subjects, and also Reports of Cases occurring in practice. Address, DR. J. L. DAVISON, 12 Charles St., Toronto.

Advertisements inserted on the most liberal terms. All Letters and Remittances to be addressed to ARTHUR A. ADAMS, Gen. Business Manager, 11 Colborne Street, Toronto.

AGENTS.—DAWSON BROS., Montreal; J. & A. McMILLAN, St. John, N.B.; GEO. STREET & Co., 30 Cornhill, London, Eng.; M. H. MAHLER, 23 Rue Richer, Paris.

TORONTO, OCTOBER, 1894.

The LANCET has the Largest Circulation of any  
Medical Journal in Canada.

## THE ONTARIO MEDICAL COUNCIL.

Since the return of the editorial "we" from a three months' sojourn in Europe, he has been looking over the columns of contemporary Ontario medical journals, with the result of his being impressed more than ever with the fact, that a very large storm may be compressed within the compass of a teapot. Judging from the number and quality of letters that have practically filled the editorial columns of some of our medical journals, the physician of Ontario needs a deal of enlightening in regard to his own interests.

But the most deplorable feature of the whole controversy is the small, personal, and bitter spirit infused into the communications. Farmers quarrelling over a line fence could not descend to more petty and unworthy arguments than have been used.

Is not the electorate sick unto death of the agitation carried on by a few wordy, loud-mouthed men who have a grievance; who wish to reform the Council by becoming, in some cases members of that much-abused body? The CANADA LANCET has let the matter severely alone, believing that the Council has done much, and is doing much, for medical education, for the protection of both the public and the profession, and for maintaining the dignity and honor of the profession. When this journal has spoken at all about the matter in question, it has always been in the most moderate terms, not holding that the Council has been either

immaculate, or utterly debased and degraded, and unworthy the support of any honest man. That that body has made mistakes is clear, but they have, we believe, honestly done their best, according to their light, to fulfil the purpose for which the Medical Council was originally created. That there have been cliques and rings in that body; that in order to have weight and carry any measure to a successful issue, a man must either honestly or otherwise belong to, or have some connection with those cliques, is unfortunately too true. Committees, vice-presidencies, presidencies, the subsidizing of a journal, *et al.*, have been cut and dried before, and in many cases long before, the Council met, and those who kept out of cliques were not in it, so far as anything their vote was worth. We have called the attention of the Council and the profession to those facts before; and from all the signs, which we think are pregnant with deep meaning, that useful body is now about to reap the whirlwind.

The screed which appears in *The Farmer's Sun* we shall only notice so far as to say that the only University graduate we know capable of such "a caustic arraignment," as he modestly puts it, is one who has been disciplined by the Council for bare-faced quackery, so that his grief and wallings will not make much difference to any one. But we sympathize with the gentle soul which is suffering such agonizing pains on account of too much loyalty to mankind and to principle. John Hampden was commonplace beside this hero.

It is a matter of congratulation to all Toronto practitioners that we have two such men to represent us as Drs. Barrick and Machell. No better men could have been found, and whatever may be the fate of the incoming Council we may be certain that Toronto will be represented with dignity and integrity. We are also glad there are to be no elections in this city. Not a little personal feeling has been keeping these constituencies warm for the past few years in connection with Council work. Men will not always do what is expected of them, and they will sometimes even work dead against those who send them to offices of honor. So now that we have practically the two best men to be got, elected by acclamation, those heart burnings will surely die out, and we shall hear less abuse of various of our fellow-practitioners.

From the list published in another column it

will be seen that in only nine of the seventeen divisions is there to be any contest. While we do not, as is manifest from our stand ever since the Defence Association came into existence, endorse wholly the old Council, we have no hesitation in saying that, in our opinion, the interest, honor and dignity of the profession, and the weal of the public, will be safer in the hands of that body than in those of the agitators who have, we think, brought about a serious condition of affairs, perhaps a dead-lock, for what appear to us to be utterly inadequate reasons.

### THE HEALING ART IN PALESTINE.

In a letter recently received from Rev. Dr. C. A. Webster by one of his friends in Toronto, he details in an amusing way some of the difficulties that attend the practice of the healing art among the natives of Palestine where his duties are performed. He says:—"A physician meets out here in Palestine just the same diseases as at home. Some of them are slightly modified in symptoms and course, but as yet I have seen very little difference. In winter, pneumonia, bronchitis, pleurisy, rheumatism are the commonest of ills, and in summer, from the wretched sanitary and dietetic habits, fevers and gastro-intestinal troubles prevail. Typhoid is nearly always present, measles very common, but scarlet fever almost unknown, and small-pox is as common as any. The disease is not nearly so fatal here as in America, and is made light of. It is quite a common thing to see children in the street playing about with a full crop of small-pox pustules on the face, just blooming with it. What a fright that would cause in our good old fossil town of ——! But medical work in this country is very trying and discouraging, and good results are often frustrated by the ignorance of the people. For example, either the patient himself or his friends will often take off splints applied for fractures, and bandages and dressings after the most serious operations where the best antiseptic work has been done; just strip off everything and perhaps put on in their place a lot of dirty cloths. I saw a young lad of ten or twelve years a few days before I left Haifa, who had a fractured jaw from a kick from a donkey (which by the way he

was teasing). I placed the fragments in position and applied splints. The next time I came, everything had been taken off to show some of the neighbors what had happened to the boy! Just fancy! But I was mad! That is a most common occurrence. One cannot depend upon dressings or splints being kept on two hours after they have been applied. Not long ago I had a case of gangrenous ulcer, a most foul and loathsome thing. After cutting away all dead tissue, and applying the costliest antiseptic dressings, the next time I came back to dress the wound I found everything taken off and a bit of dough put on in its place, and was gently told that we 'Franjies' (foreigners) did not understand native diseases; and again I was mad,—but what was the use?

"Before leaving Haifa I had a case of typhoid fever, and the friends of the patient were enraged and threatening to have me arrested for malpractice and dreadful cruelty, because I prohibited them from giving him to eat Arab bread, green apples, and raw cucumbers! That is a fact, and it was only by using personal violence that I could keep them from it. Still, these people may not be so very far behind us after all. I can remember quite well among the good people of the old Mitchell Road, near our old home, how they used to believe that a black cat cloven in two and applied to an ulcer, was a sure cure; a white hen split up and applied to a peritonitis was an un-failing remedy, and red silk never failed to charm away erysipelas. Yes, and there are some among them who are still of the old faith. So we must take this people just as we find them, and try to teach them better. But it requires inexhaustible patience, and a temper and disposition as smooth as polished ebony. That is what we have come here for, but now and then one has to get mad and abuse them up and down. It is a great satisfaction to one's self after long pent up feelings of anger and disgust, and it has a good, moral, wholesome influence both upon Jew and Gentile here."

We, in Ontario, can heartily sympathize with the physician so placed, for, indeed, human nature and human ignorance, so far as the doctor is concerned, are the same in kind, and practically the same in degree, in many instances, in Jericho as in Toronto. When men of the presumed intelligence and ability of the Patron leaders here can

be bamboozled by a few designing and disgruntled medical men into taking up a quarrel which in no sense concerns them, and announcing as a plank of their platform, their intention of preventing medical men from dealing themselves with flagrant offences against the code of ethics, there would seem to be but little difference between the boasted "bone and sinew" of this country and the beggarly "masses" of effete monarchies in the East.

### INCREASE OF LUNACY.

The subject of the increase of lunacy is one of deep interest to every one, but more especially to the members of the medical profession. It is easy to say that nature is constantly adapting herself to our changed conditions and environment and that the human race is in a better physical state to-day than ever before. But the recent, forty-eighth report of the British Commissioners on Lunacy shows an increase of 2,245 persons coming under the category of lunatics, idiots, and persons of unsound mind. This is the largest increase in the number of lunatics yet reported. The report goes on to say: "This large increase calls the more for some special consideration, because it follows an increase of 1,974 in the preceding year, that being far above the average for the ten years 1882 to 1892, which was only 1,300. The increase seems to have been fairly general throughout England and Wales, but the predominant feature of the figures is the great increase shown in the County of London, its pauper lunatics numbering on January 1st, 800 more than they did a year previously. It is perhaps right in this connection to point out that from the administrative County of Middlesex, which is fast becoming metropolitan, there is shown from last year an excessive increase of 103, against an average for the previous ten years of 42."

There are some considerations which must be taken as an offset to the very gloomy outlook as shown by the above-mentioned report. Thus it appears that the greatly improved treatment of insanity in the past two decades, and a greater willingness of the public to enter asylums, has succeeded, on the one hand in keeping alive numbers who under less favorable conditions would have died; thus increasing the numbers

showing in reports; and, on the other hand, bringing to light many cases which were formerly kept concealed by relatives and friends, which also would increase the reported numbers. Again, the increase in population has something to do with increase in the number of lunatics, though we are not aware that the former is keeping pace with the latter. So much has been said by both the medical and lay press during the past few years, and the general mind having been pretty well made up on the subject, it is encouraging to find any reasons, such as those above cited, to show that the increase is not so rapid as might at the first consideration be supposed, and that the nations as nations are not becoming insane.

### THE SEVENTH ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

This live society met for the current year in Toronto. Its sessions were held in the Medical Council Chamber, on the 19th, 20th and 21st of Sept., and both scientifically and socially the gathering was a pronounced success. With Dr. G. H. Robé as President, and Dr. William Warren Potter as Secretary, it goes without saying that a programme calculated to bring out excellent work had been perfected in every detail, and with a very full attendance of the fellows, success was assured. The subjects taken up were varied and full of interest, and the discussions to which they gave rise were, as a rule, well sustained.

A most cordial invitation to attend was extended to the profession of this city and province, and this was largely taken advantage of. The listener could not but recognize that he was in the presence of a set of earnest and progressive scientists, men who have taken no inconsiderable part in the evolution of Gynæcology, in transforming it from a routine of palliative topical applications and pessary adjustments, to the most advanced and most beneficent of all the specialties. Many of those present were men of more than American reputation, and their handling of "Appendicitis," of "Perineal Operations," of "The Abdominal Incision," and of "Intestinal Anastomosis," was strong, rich and sometimes masterly.

It is but just to say that the resident Fellows had made ample provision for the entertainment of their guests. Under the influence of the hospitality extended, the visitors were not slow in declaring this to be an ideal city and their stay here to have been pleasurable in the extreme.

#### POISONING BY GUAIACOL.—

Prof. Oscar Wyss, (*Deutsche Medicinische Wochenschrift*), cites the first fatal case of guaiacol poisoning and directs attention to the toxic symptoms as follows:—

A girl nine years of age, who had been accidentally given 5 c.c. (75 drops) of guaiacol. In a short time she became unconscious; the conjunctivæ became injected, the corneal reflexes diminished and the pupils no longer reacted to light; there were frequent attempts at vomiting and the saliva flowed from the mouth in large quantities. The pulse became rapid, the sensibility of the skin much diminished. Finally the patient began to vomit; the physician detected the odor of guaiacol. The stomach was washed out, but she did not rally. The cyanosis gradually diminished, and instead of it a deadly pallor was observed; the respiration became frequent. Three and a half hours after the guaiacol had been swallowed the patient passed 100 c.c. of brownish-red urine.

The spleen and liver soon enlarged, and the temperature fell to 35.5°C. (96°F.) and small hemorrhages were observed upon the skin of the arms and legs. The urine contained albumen, blood and casts, and Ehrlich's carbolic acid test was positive.

Jaundice soon appeared, the stupor increased and the patient died on the third day.

The autopsy revealed an acute gastritis and enteritis, parenchymatous degeneration of the liver, acute hæmorrhagic nephritis, parenchymatous degeneration of the heart muscle, and ecchymoses in the pleura, peritoneum, endocardium and pericardium. The spleen was much enlarged. Kobert in his text-book on "Intoxicationen" points out that after one gram (15 drops) doses of guaiacol slight appearances of poisoning may supervene. These are characterized by a burning feeling in the stomach, nausea, etc. In one case in which fifteen grams, (three and two-third

drachms) were accidentally taken by a patient in the Dorpat Clinic, the stomach was immediately washed out and the patient was rescued. However, unconsciousness set in, the pupils became contracted, the breathing irregular and the intensely dark appearance of the urine was very noticeable.

THE DIARRHŒA OF TYPHOID.—In the Cavendish lecture delivered in London by Sir William H. Broadbent, the author gives a great many very useful points in the treatment of typhoid, *Med. Press*. His remarks on the diarrhœa, due to septic processes, are very happy. They are in abstract as follows: "One of the effects of septic processes in the intestine is diarrhœa, which may be recognized by the offensive smell of the evacuations, differing from that of the typhoid stools. The color is often dark and not unfrequently the consistence is watery with brown particles or flakes in suspension, quite unlike the pea-soup typhoid stools. The abdomen at the same time is often distended with gas, and the temperature may be considerably raised by absorption of septic products. Diarrhœa caused in this way is most frequent early in the disease and is most frequent in patients who have indulged in alcohol or in excess of food. It may also be due to continued consumption of solid food after the fever has set in. The treatment I have found most efficacious in diarrhœa, due to sepsis of the intestinal contents, is the administration of perchloride of mercury, which I have usually given in doses of one drachm of the solution with one grain of quinine every three or four hours for twenty-four or forty-eight hours. Calomel in repeated small doses of one-third of a grain every three or four hours is equally effectual; the diarrhœa has almost always, in my experience, been checked, the abdomen subsiding and the temperature falling one or two degrees. The entire aspect of the case is usually changed. So favorable has the effect of the perchloride been that I have often been induced to continue its administration in small doses of half a drachm three times a day through a great part of the fever. A common practice in Germany is to initiate the treatment of a case of typhoid fever by two or three grains of calomel on two successive days. Without going so far as to recommend this, I think it would prevent

diarrhœa such as I have just described, and at the outset of the attack a single dose would probably be beneficial in most cases. More formidable than local irritation are the effects on the nervous system of absorbed products. Other bacteria besides the typhoid bacillus may effect an entry into the blood through the lesions in Peyer's patches, but it is the ptomaines formed by their activity in the alimentary canal which constitute the poisons. Sometimes with diarrhœa of the kind just described, with high temperature and tumid abdomen early in the disease, there is either wild, maniacal delirium or great stupor and heaviness. The good effects of the employment of the perchloride of mercury or calomel are frequently seen in the mitigation of the nervous symptoms as well as in the alleviation of the intestinal irritation."

The diarrhœa caused by undigested or irritating food he, of course, deals with very differently, viz., by stopping the food which is acting as an irritant and substituting some other form of nourishment, or, in the case of milk, by peptonization, or by the addition of lime water or soda water. He holds that the physician should see every stool, or, at least, one motion each day.

**THE STARTING-POINTS OF TUBERCULOUS DISEASE IN CHILDREN.**—In an extremely interesting and useful paper by Dr. J. Walter Carr, in *The Lancet*, the author calls attention to the following points which, while they are generally recognized by our physicians, may yet be emphasized with benefit to us all. Their extreme importance will be noted by every one who has anything to do with children. The paper is the result of the records of 120 autopsies made at the Victoria Hospital, Chelsea, upon tuberculous children, and in whom no less than 82 per cent. showed more or less generalization of the disease. He sums up his paper as follows:—1. That tuberculous disease in children commences usually in the glands, the liability being at its maximum during infancy and early childhood, and rapidly decreasing in later childhood. That caseous glands, especially the internal ones, may (a) remain quiescent for an indefinite period; (b) start tuberculous mischief in adjacent parts, especially the lungs, by direct extension; and (c) set up general miliary tuberculosis. 2. That

the internal glands, at any rate, are probably most often infected directly from the organ with which they are connected, although the possibility of infection through the blood-stream must not be forgotten. 3. That tuberculous disease starts much more frequently in the thorax than in the abdomen, and certainly far more often in the thoracic than in the mesenteric glands. This does not throw any doubt upon milk as a possible source of tuberculous disease, but this does not seem to be by any means a frequent mode of infection as compared with that through the lungs. At the same time the importance attached by Dr. Woodhead, on the basis of his statistics, to the mesenteric glands, indicates the necessity of a further and prolonged investigation of the pathological evidence, not in one place only, but in all parts of the country—for the conditions producing tuberculous disease may vary materially in different localities. 4. That glandular disease may often exist alone and quite unsuspected; in very many cases, doubtless, it is quite impossible of diagnosis. 5. But, after all, by far the most important treatment is the prophylactic. Whether the glands get infected directly through the lymphatic channels or indirectly through the blood-stream, the organisms must in every case have passed in through the mucous membrane, and through a healthy one they probably cannot penetrate. We have, therefore, to try to prevent gastro-intestinal and respiratory catarrhs, and especially to avoid their becoming chronic; to deal promptly with, and if possible prevent, rickets, the great cause of such catarrhs in early childhood; and to take especial care of children during convalescence from measles, whooping-cough, and other acute specific diseases, so liable to depress the vitality of the body generally, and the resistant power of the mucous membranes, as well as the filtering power of the glands, in particular.

**ADVICE AS TO STIMULANTS.**—In a very interesting work, by Dr. Geo. Herschell, of London, called "Health troubles of City Life," the writer says: "Stimulants never increase the natural capacity of the brain. They can only abstract for the purpose of work in hand some of the energies which are sorely needed to repair and restore a brain which has already been taxed to

the furthest limit which is consistent with health. To remove the sense of fatigue caused by overwork by the consumption of alcohol, is to close one's ears to the voice of nature. The weariness of the brain is a protest against further exertion until recuperation has been obtained by rest; and if the weary feeling is deadened or destroyed by adventitious means, nature will exact her penalty. When the overworked man of business having been on his legs all day, and feeling fit to drop, with a sensation of 'all-goneness' about the region of the stomach, rouses himself with whatever he is in the habit of taking, be it whiskey, champagne, or even tea or coffee, he does not add one atom of force to his stock of energy, although he fancies he does, but having put to sleep his sense of weariness, simply appropriates some of his reserve for the present necessity. He has accepted a bill at a short date to which a ruinous rate of interest is attached, and his resources will not allow him to make many repetitions of the experiment. His account at the bank of life will soon be overdrawn. Alcohol cannot add one iota to his reserve of nervous energy, but it may delude him into exhausting it. The busy man should once for all rid himself of this fancy that he can create by artificial means, an abnormal store of brain-power. He cannot enlarge the limits which nature has set up."

**THE EFFECTS OF QUININE ON PREGNANCY.**—A collective investigation of this subject has been recently undertaken, with these conclusions, *Med. Chir. Rev.*: 1. The existence of pregnancy is no bar to the administration of quinine. 2. For fevers and other affections during pregnancy, in which quinine is indicated, the effects of the drug are more marked than those of any other. 3. That abortion following the administration of quinine is either the result of the original malady or the effect of idiosyncrasy. 4. That allowing for an idiosyncrasy, in cases in which a tendency to abortion exists, and in others as a matter of precaution, quinine is best administered combined with a sedative (opium). 5. Hence the old-standing view of the action of quinine on the duration of pregnancy is not borne out by the clinical experience collected in the replies. This view has been held by many of our best known Canadian physicians for years, yet we hear occasionally a

man of the old school say he would not use quinine during pregnancy. In our opinion, the drug would not be so likely to produce evil results as would the fever, malaria, or other poison for it would naturally be given.

**CHOLERA IN EUROPE.**—The latest official reports, as well as the reports received through the various news agencies, go to show that the Asiatic pest is still to the fore in Europe, and that the danger is by no means past. It prevails over a large extent of Russia, being particularly active in St. Petersburg. Southern Russia also has many new cases. In North-Eastern Prussia many cases have appeared. Belgium has shown a good many cases. Turkey numbers them by the thousand, the Netherlands, Galicia and other provinces are feeling the scourge. During the first week of September *The Lancet* reports 5,518 cases, with 2,456 deaths in European Russia alone. Fortunately for us on this continent, Great Britain has remained free, though we are by no means safe with so many centres of infection spread over Europa.

**INTERNAL USE OF ANTISEPTICS.**—Recently, in *Pract.*, Dr. Triwousse took a strong stand against internal antiseptic treatment, which he asserts is "not only useless, but positively injurious under certain circumstances, especially in cholera." He further calls attention to the fact that certain microbes, especially those accredited to cholera and typhoid fever, when taken into the human economy, largely lose their virulence, and are able to re-acquire the same only by passing through water, air, soil, etc.; and that at the time when we observe these diseases the microbes and other toxins are no longer dangerous. This is good practical common sense.—*Ex.*

And yet, what is calomel, or rather the bichloride into which it is no doubt changed in passing through the stomach, but an antiseptic, from which we have all seen good results, not only as a cholagogue but as a disinfectant.

**CANDIDATES FOR ELECTION TO THE ONTARIO MEDICAL COUNCIL.**—The following list of candidates is, we believe, correct:—No. 1, Dr. Bray, Chatham, and Dr. Samson, Windsor; No. 2, Dr. Williams, Ingersoll; No. 3, Dr. Roome, London; No. 4, Dr. Graham, Brussels; No. 5, Dr. Brock,

Guelph; No. 6, Drs. Henry and Smith, Orangeville; No. 7, Dr. G. Shaw, Hamilton, and Dr. Heggie, Brampton; No. 8, Dr. D. L. Philip, Brantford, and Dr. J. Armour, St. Catharines; No. 9, Dr. Law, Beeton, and Dr. Hanby, Wau-bashene; No. 10, Dr. Barrick, Toronto; No. 11, Dr. Machell, Toronto; No. 12, Dr. Sangster, Port Perry, and Dr. Cotton, Lambton Mills; No. 13, Dr. McLaughlin, Bowmanville; No. 14, Dr. Ruttan, Napanee; No. 15, Dr. Spankie and Dr. Dickson, Kingston; No. 16, Dr. Preston, New-boro', and Dr. Reddick, Winchester; No. 17, Dr. Rogers, Ottawa, and Dr. Bergin, Cornwall.

**THE USE OF GLYCERINE IN HEPATIC COLIC.**—*L'Union Médicale* states that Ferrand reports favorable results obtained by him in the treatment of hepatic colic by glycerine. The glycerine is administered by the stomach, and he believes is rapidly taken up by the hepatic vessels. He says it exercises a distinct cholagogue influence, and tends to prevent hepatic colic. Should an attack of colic come on, a large dose, from  $\frac{1}{2}$  to 1 ounce of glycerine—should be administered. Ordinarily 1 to 3 drachms of glycerine each day, taken with alkaline water, is quite sufficient to prevent future attacks.

**MANAGEMENT OF SCIATICA.**—Doctor Benj. H. Brodnax declares, *Med. Age*, he obtains almost instant relief in sciatica, from the hypodermatic injection of five to ten minims of a solution of twenty drops of carbolic acid to the ounce of water. He recommends the injection being carried down to the seat of pain.

**FRECKLES.**—A paragraph seasonably going the round of our exchanges attributes to Hager the assertion that freckles can be removed by the application, every other day, of an ointment composed of white precipitate and subnitrate of bismuth, each one drachm; glycerine ointment, half an ounce.

**PROPHYLACTIC AGAINST RECURRENT TONSILLITIS.**—*Therap. Bülleten*—  
 R—Acidi carbolicis . . . . . gr. lxxii.  
 Spiritus tenuoris . . . . . ʒ iij.  
 Olei menthæ piperitæ . . . . . ℥ i.  
 Ten drops in a cupful of warm water; used as a gargle morning and evening.

**PRACTICAL ADVICE.**—A young medical man, says Jacbi, who runs off into a specialty, honestly believing that a human organ can be studied and treated separately like the wheel of a watch, has not intellect enough to be a physician, and ought to have been discouraged from entering the ranks.

**BORIC ACID IN CONJUNCTIVITIS.**—*American Medico-Surg. Bulletin*—

R—Acidi borici . . . . . gr. iv.  
 Sodii boratis . . . . . gr. xii.  
 Aq. dest. . . . . ʒ i.  
 Fiat collyrium.

**ELECTRICAL TREATMENT OF RED NOSES.**—Dr. Helling, *Med. Rec.*, says that a red nose is due to contraction of the arterioles and dilatation of the veinlets. He claims to have cured a number of cases by the application of a continuous current of moderate intensity for five to ten minutes daily.

**LOCAL ANÆSTHESIA.**—A mixture of ten parts of chloroform, fifteen parts of ether, and one part of menthol, used as a spray, is recommended, *Med. Age*, as an excellent and prompt means for obtaining local anæsthesia lasting for about five minutes.

**UNEQUAL DILATATION OF THE PUPILS** is regarded by Dentrée as a sign of great value in the diagnosis of pulmonary tuberculosis. It is present, he says, in the majority of cases of this disease.

THE police of New York say there are about ten thousand opium smokers in that city.

**Books and Pamphlets.**

**AN AMERICAN TEXT-BOOK OF GYNÆCOLOGY,** Medical and Surgical, for the use of Students and Practitioners. By Henry T. Byford, M.D., John M. Baldy, M.D., Edwin Cragin, M.D., J. H. Etheridge, M.D., William Goodell, M.D., Howard A. Kelly, M.D., Florian Krug, M.D., E. E. Montgomery, M.D., William R. Pryor, M.D., George M. Tuttle, M.D. Edited by J. M. Baldy, M.D. A royal 8vo volume, with 360 illustrations in text and 37 colored and half-tone plates. Cloth, \$6.00; sheep, \$7.00; half Russia, \$8.00. Philadelphia: W. B. Saunders. 1894.

This is a beautifully printed book. The illustrations are very numerous and exceedingly well executed. Indeed they are meant mainly to



illustrate the text, all anatomical descriptions except what are essential being omitted. The method of dealing with each disease is clear, doubtful points being left for the most part alone, although the most important of the moot points are noted and explained. The list of names given above is a sufficient guarantee as to the usefulness of the work, comprising as it does the most noted among the gynæcologists of America, the birthplace of that art. The chapters on Technique and After-treatment will be of special value to students, laying down as they do the latest and most approved methods of preparation of the operator, assistants and nurses, and the patient for all operations; the best methods of preparation of disinfection of sponges, ligatures, instruments, etc.; and, in a word, all necessary technique.

In the chapter on After-treatment, feeding, drinking, management of the bowels, bladder, hernia, etc., have been taken up in detail.

The work is said to embody as nearly as possible the combined opinions of the authors, the editor having striven to render all the statements as uniform as possible. Gynæcology has made such rapid strides in the past ten years, that readers, both students and practising physicians, will welcome the book, which appears to be all that can be desired on the subject.

**ATTFIELD'S CHEMISTRY:** Chemistry, General, Medical and Pharmaceutical; including the Chemistry of the U. S. Pharmacopœia. A Manual of the General Principles of the Science, and their application to Medicine and Pharmacy. By John Attfield, M.A., Ph.D., F.I.C., F.C.S., F.R.S., etc., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, etc. Fourteenth edition, specially revised by the author for America to accord with the new United States Pharmacopœia. In one royal 12mo. volume of 794 pages, with 88 illustrations. Cloth, \$2.75; leather, \$3.25. Philadelphia: Lea Brothers & Co., 1894. Toronto: Carveth & Co.

This book which has been so justly popular, as is shown by the number of its editions, comes to hand just in time for the medical students of '94 and '95. The work supplies all that is necessary for students of medicine and pharmacy, as well as physicians and pharmacists. It is so well known that no commendatory notice from us is

necessary; but we would like to express our admiration for the arrangement of the subject, for the clearness and conciseness of definition especially in organic chemistry that *bête noire* of the student, and for the excellent series of test questions running through the work. Nothing more perfect or complete as a text book has come in our way.

**SAUNDERS' QUESTION COMPENDS, No. 14.—Part I. Essentials of Refraction and the Diseases of the Eye.** By Edward Jackson, A.M., M.D. Part II. Essentials of Diseases of the Nose and Throat. By E. B. Gleason, S.B., M.D. Second edition, revised, illustrated. Crown 8vo. Cloth. 1894. Philadelphia: W. B. Saunders. Price, \$1.00.

Many deny the use of Quiz's altogether, forgetting that they are not intended to replace the larger text books, but are designed to assist the over-taxed student in keeping in mind the more important points in connection with the subject of which they treat. This series has certainly been a great boon to students preparing for examinations, where properly used.

**BULLETIN OF THE JOHN HOPKINS' HOSPITAL, Baltimore, June-July, 1894. Vol. V., No. 41, containing the following:**

I. The Significance of Albuminuric Retinitis in Pregnancy, by Robert L. Randolph, M.D. II. An Operating Table, by Hunter Robb, M.D. III. Primary Carcinoma of the Gall-Bladder, by Delano Ames, M.D. IV. Proceedings of the Hospital Medical Society.

**PRACTICAL APPLICATION OF PRINCIPLES OF STERILIZATION.** By Hunter Robb, M.D., Associate Gynæcology, Johns Hopkins University, Baltimore. Reprinted from American Journal of Obstetrics, Vol. XXX, No. 1. 1894. Wm. Ward & Co.

**NOTES ON GYNÆCOLOGICAL TECHNIQUE.** By Hunter Robb, M.D. Reprinted from the New York Journal of Gynæcology and Obstetrics, May, 1894.

**EUROPHEN** in an ointment gives excellent results in tertiary syphilitic eruptions, in parasitic scalp diseases, in chronic eczema and in venereal ulcers.

Morphine and hydrocyanic acid or cyanide of potassium are incompatible.