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THE CANADA LANCET.

A MONTHLY JOURNAL OF

MEDICAL AND SURGICAL SCIENCE,
CRITICISM AND NEWS.

VOL. XXI.] TORONTO, APRIL, 1889. [No. 8.

Original Communications.

ON THE INTERCOMMUNICABILITY OF TUBERCULOSIS BETWEEN THE DO- MESTIC ANIMALS AND MAN.*

BY EDWARD PLAYTER, M.D., EDITOR CANADA HEALTH
JOURNAL.

Of all the destroyers of human life, tuberculosis stands first. Evidently not less than at least 10,000 lives, and possibly 15,000, are destroyed by it in Canada alone every year. From one-sixth to one-tenth of all deaths, almost everywhere, are caused by tuberculosis; chiefly by that form of it known as pulmonary consumption. The investigation of the cause and the source, then, of this most destructive agent, is a subject of the very first importance, not only to this locality, but to the country at large.

As it is not my object to enter into the unhygienic conditions which give immediate rise to this disease—to suitable soil for its development, or, rather, which so depress the vitality as to enable the bacilli or their spores to take root in the human organism, develop, multiply, and destroy life,—I will now at once endeavor to lay before you some of the evidence which has been recorded to show that the disease may be, and probably frequently is, communicated to the human organism from domestic animals, and more especially from cows.

About seven years ago at this present time, Mr. Vet.-Surg. Shaw, of the U. S. Bureau of Animal Industry, at Washington, said, in the *U. S. Health Bulletin*:—"To-day, after ten years of experimental observations by Villeman, Viscar, Klebs, Zurn, Bollinger, Leisering, Chanveau, Bagg, Semmer, Guenther, Harms, Biffi, Virgad, Gerlach, Buhl,

* Read before the Meeting of the Ottawa Medico-Chirurgical Society, March 8th, 1889.

Tilbury, Fox, Burden-Sanderson, and a host of others, it has been definitely established: 1st, that the tuberculosis can be transmitted from animal to animal, from man to animals, and presumably from animals to man, by inoculation, or by the accidental contact of tuberculous matter with a raw or abraded surface; 2nd, that the raw tuberculous matter taken from man and animals and eaten by other animals, may determine tuberculosis in the latter; 3rd, that even the flesh of tuberculous animals will sometimes produce tuberculosis in animals that consume it, though with less certainty than if the tubercle itself were taken; 4th, that the milk of tuberculous animals will at times produce tuberculosis in susceptible subjects, and, above all, where the morbid deposit has taken place in the udder; 5th, that cooking of the tuberculous matter gives no guarantee of protection, as flesh is a poor conductor of heat, and tubercle that had been boiled from a quarter to half an hour, has readily infected a number of animals that partook of it; 6th, that tubercle matter mixed with water and thrown into the air from an atomizer, causes with great regularity the development of tubercles in the lungs of animals respiring such air.

Within the last seven years the subject has received a great deal of attention, and a great deal of scientific investigation has been the result.

The bacillary origin of tuberculosis, and the transmissibility of the disease from one individual of the human race to another, are points now universally admitted, and not doubted by any one, I believe, whom we can regard as an authority. The disease is the most common of all human diseases, except the ordinary infectious diseases of childhood, and the sources or vehicles of it must be proportionately common.

Dr. E. F. Brush, who is I believe connected with the Bureau of Animal Industry at Washington, and who, as he states, has long been compelled to devote his attention to the subject of diseases affecting dairy stock, in a lengthy article in the *N. Y. Medical Journal*, in March of last year, on the question we are now considering, declared it as his "candid opinion" that tuberculosis "is all derived from the bovine race." The human race is almost everywhere associated with the cow. As Dr. Brush words it, "We are veritable parasites on this animal. We milk her as long as she will

give milk, and we drink it; then we kill her, eat her flesh, blood, and most of the viscera; we skin her, and clothe ourselves with her skin; we comb our hair with her horns, and fertilize our fields with her dung, while her calf furnishes us with vaccine virus for the prevention of small-pox." Now the cow has tuberculosis and we have tuberculosis. If we regard her as a possible common centre of the infection, we have a reasonable and full explanation of the commonness of consumption. Where this animal does not exist, pulmonary consumption, it appears, is unknown. The inhabitants of the steppes of Russia, who have no cows, have domesticated the horse, using its milk, meat and skin, and it is said a case of pulmonary tuberculosis has never been known to exist among them. The Esquimaux have no cows, neither have they pulmonary phthisis; and it appears to be a fact, that, where the dairy cow is unknown, pulmonary consumption does not prevail. Evidence that a certain amount of relation exists between the death-rate of man and animals respectively from consumption, and that this relation is materially affected by the use of tuberculous flesh for human food, is afforded in a chart issued by the authorities of the Grand Duchy of Baden, in the year 1881. The chart applied to 52 towns, and showed that, where tuberculosis was prevalent among cattle, it was proportionately prevalent amongst human beings, and was particularly prevalent in towns in which the number of low-class butchers was greatest. One remarkable exemption to this was, however, found in the town of Wertheim; but it was significantly pointed out, that from this town large quantities of sausages, made from flesh of inferior quality, were annually exported. Many observations of a like nature have been made in the United States; that is, that where tuberculosis is prevalent among cattle, it is proportionately prevalent amongst the human population.

At the Paris Congress on tuberculosis, in July last, Dr. Robinson, of Constantinople, in a communication on Consumption in Asia Minor, stated that, notwithstanding the fact that the inhabitants of this country lived much in the open air, the disease was very prevalent, and ten per cent. of his patients suffered from it. The natives recognized its contagiousness, and always destroyed all articles, etc., used by those suffering from it. The frequency of the disease there, Dr. Robinson said,

there could be no doubt, was owing to the free consumption of milk and of nearly raw flesh by the natives.

On the other hand, the Hebrews are exceptionally free from tuberculosis, as we all know, and they exercise the greatest care in the inspection of the meat they consume. The lungs of all the animals destined for their food are examined, and in all cases where they cannot be fully inflated, or where there are adhesions of the pleura, the animals are rejected.

What are the conclusions we are almost forced to draw from these facts?

I need hardly state here that tuberculosis in the bovine race, once known as the "pearl disease," is now universally regarded as being identical with the tubercular disease in man. Not only are the bacilli in the two cases undistinguishable under the microscope, but their growth in various culture media, and their other biological characteristics are identical. The latest scientific evidence I have observed on this point is this: Dr. Woodward and Prof. McFadyean, last year, examined 600 cows in the Edinburgh dairies. Among other results of their investigations, Dr. Woodward states that he found as great differences in size between the bacilli under the same cover-glass, from sputum of a tuberculous patient, as he had found between bacilli taken from a cow and those from a human subject; and he concluded that any differences there might be between the size, mode of growth, or position in the tissues of the human and bovine tubercle bacilli, was not sufficient to constitute a specific difference.

From our present degree of knowledge of comparative physiology, should we not naturally conclude that any parasite finding a favorable soil for its development in the cow or other domestic animal, would find the soil of the human organism about equally favorable; and vice versa? The bacilli all appear to be very tenacious of life, and a difference of two or three degrees in the temperature of the different organic fluids, they would doubtless readily reconcile themselves to, and likewise to any other slight physiological or chemical differences existing between the internal structure or condition of the human body and of these lower animals.

There is a large amount of the most conclusive evidence that the disease is communicable from

man to the domestic animals. Besides a great many instances of observation, in which it was plain that poultry had contracted well-marked tuberculosis from eating the sputa from the human lungs, the bacillus from human sputa has been, time and again, cultivated and inoculated into various animals, with the result of giving rise in them to unmistakable tubercular lesions. Bollinger, one of the first German authorities, has inoculated tuberculous matter obtained from man into the dog, and produced typical miliary tuberculosis of the pleura, lungs, liver and spleen; and a great many experiments of a like character are upon record. But I will not dwell upon this settled point.

In the last number (March 2nd, ult.) of that conservative and cautious organ, the *N. Y. Med. Jour.*, the editor, Dr. Frank P. Foster, in an editorial on this very subject, says: "Fowls have become infected by the sputa of tubercular patients, and hogs by the milk of cows in which there was tubercular disease of the udder and teats; the transmission of pulmonary tuberculosis in man from one individual to another is undoubted, and unless the bacillus tuberculosis is greatly modified in its passage through the lower animals, the danger of the infection travelling from animals to man would seem to be very great.

Many classes of the feathered race, I may here observe, are very prone to this disease; especially the common fowl, pigeon, partridge, and other grain-eating birds. Dr. T. W. Mills, Prof. Phys. McGill University, at the last December meeting of the Montreal Medico-Chirurgical Society, exhibited specimens from a tuberculous pigeon, a white Jacobin, bred by himself, which had died two days previously. The bird had been ill only three weeks, and was fairly well nourished at death. The tubercles were very widely distributed; the organs inflamed and bound together by recent adhesions. Owing to enlargement of the organs and pressure, the apex of the heart was squeezed to such an extent that it must have become functionless. Dr. Mills stated that no doubt many birds offered for sale on the market were subjects of tuberculosis.

Now it may be argued that there is no direct proof of the transmission of tubercle from animals to man by the consumption of flesh and milk. "Such proof, it need scarcely be said,"

argues Prof. Walley, of the Royal Vet. Col., Edinburgh, "cannot, for manifest reasons, be obtained, but the mass of indirect proof in favor of such supposition is enormous." But he adds, "Very recently a most striking example of the effects of consuming the flesh of a tuberculous animal has been brought to light by a French physician, in the case of a young woman who rapidly became consumptive as the result of eating the imperfectly cooked bodies of tuberculous fowls.

The flesh of tuberculous animals has evidently been suspected as dangerous from the earliest records. On the authority of Lydtin, Fleming and Van Hertsen, there existed in the Mosaic laws strict legislative rules condemnatory of the flesh of an animal affected with this disease. The laws embodied in the "Mischna" (the oldest part of the Talmud) distinctly refers to the prohibition of the use of such flesh. From that time onward, various ordinances have been instituted, with the object of checking the use of consumptive flesh, especially in France and the German States, and even in Spain, Italy and Switzerland; and severe punishment has at different times been inflicted upon butchers and others who have wilfully sold such flesh for human food.

That the milk of tuberculous cows is dangerous, there is more conclusive evidence than that the flesh is dangerous. Long before Koch's discovery of the tubercle bacillus, it had been accidentally and experimentally demonstrated that milk was infective by ingestion to calves and other young animals; and, as Prof. Walley observes, "there is a mass of evidence in favor of the view that by this vehicle the germs of the disease are conveyed from the cow to the human subject." The question of the infection of tuberculosis being conveyed by milk is of greater importance than is that of infection by flesh; for the two-fold reason, that the former is largely consumed by infants and generally in an uncooked state. The danger of contamination by milk will be more clearly comprehended when it is known that the tubercle bacillus can be readily detected in the lactiferous product of animals in whose udders tubercular lesions exist; and also, as has been shown by Professor Bang, of Copenhagen, in the milk of women in whose breasts the disease existed. Of the 600 cows examined by Dr. Woodward and Prof. McFadyean, already referred to, in six cases they de-

monstrated the presence of tubercle bacilli in the milk.

Prominent physicians both on this continent and in Europe maintain that tuberculosis is often imparted to human subjects by milk from diseased cows, and Prof. Bollinger, in a paper read not long ago in Munich, has sustained their position. He said that repeated experiments show that the milk of tuberculous beasts has a very decided contagious influence, and its noxious properties cannot always be expelled even by boiling. The Professor enjoined upon farmers the necessity of taking the strictest care of their stock, and upon people generally the greatest care as to the quality of the milk they use. Prof. D. E. Salmon, of the U. S. Bureau of Animal Industry, declares his belief that tuberculous milk is an exceedingly prolific source of consumption in the human family; and says there are clinical observations proving the transmission of tuberculosis from animals to man through the use of this fluid. Other U. S. authorities have expressed themselves in equally strong terms. One connected with this same Bureau, whose name I cannot recall, believes that half the cases of consumption in the United States are caused by tuberculous meat and milk. But let us come to something more definite. Prof. Walley says: "In 1872 I lost a child in Edinburgh under circumstances which allowed but of one explanation, viz., that he had contracted mesenteric tuberculosis through the medium of milk." A Mr. Cox, of the Army Veterinary Department, Eng., has related the particulars of a case which led to the same conclusion; as also has Mr. Hopkins, F.R.C.V.S., of Manchester. Fleming has referred to a similar case as occurring in a child of a surgeon in the United States, and a short time ago, says Walley, a case of mesenteric tuberculosis from the imbibition of milk occurred in the child of a well-known veterinary officer of the Privy Council. At a meeting of the Edinburgh Medico-Chirurgical Society held last year, Dr. Woodward, referred to some undoubted cases of transmission to man and the pig by the medium of milk. A few years ago, in a paper bearing upon this subject, which I had the privilege of reading before the Toronto Medical Society, I mentioned the two following cases, which had then just been recorded in the U.S. National Health Bulletin: One, by Mr. J. Shaw, V.S., Prof. of Vet. Med. in Cornell Uni-

versity; in Brooklyn, N. Y., a family cow was found in an advanced state of tuberculosis, and the owner, one William Martin, and his wife, were rapidly sinking under the same malady. In the other case, reported by Dr. Corlies, of New Jersey, a family cow, supposed to be suffering from lung plague, was found to be afflicted with tuberculosis instead, and the owner's wife, who had been making free use of the milk warm from the cow, was suffering from the same disease, but was persuaded to give up the use of the milk, when she underwent an immediate and decided improvement.

A more striking case than any one of these was recorded in the *Medical Press and Circular* a few months ago, by Denune, of Berne, the details of which are as follows: An infant, aged four months, belonging to a family whose history was absolutely negative in regard to tubercular affections, died of tuberculosis of the mesenteric glands; a fact confirmed by a post-mortem examination. The glands alone contained the bacilli; or, at least, none could be found in any other part of the body. The child had been fed with the milk of a cow which was kept for the special purpose. For the purpose of inquiry, the animal was killed and examined. The left lung and pleura were found to be studded with tubercle, in which the bacilli were easily detected. The milk first drawn yielded but negative results, bacteriologically, but the bacilli were found in portions of this fluid expressed from the deep parts of the mammary glands.

The journal alluded to regards this case as important from another point of view: as if, instead of a human infant, a calf had consumed the milk from its mother's udder, it would in all probability have become tuberculous, and the case would have been regarded as one of heredity.

According to Prof. Bang and others the cream and butter, and also the buttermilk, from tuberculous cows, have been shown to be as infective as the milk, if not more so. This is of the most serious importance of all; for although the milk and flesh can doubtless be so cooked as to be rendered safe, it is not so practicable to cook cream and butter.

Now it becomes a question—Is the disease in Canada so prevalent among cows or other animals as to create alarm or uneasiness? I should

say, at once, although not yet very prevalent, it is sufficiently so, in view of all the facts which I have brought before you to-night, with others yet to note, to give rise to much uneasiness, and indeed to more than this, if some decided action be not soon taken with the view of lessening the danger; as by a system of inspection of both cows and slaughtered beef, and of the education of the farming community in relation to the whole subject. I think I can bring before you evidence which would convince anyone, that now is the time to take some action, in order to avoid or prevent much more serious consequences in the near future.

I will first say a few words relating to the early symptoms of the disease in cows. A peculiarity of the disease which much increases our difficulty in deciding upon the point now under consideration, and which must not be overlooked, is the obscurity of the early symptoms. As Prof. Walley says: Under certain circumstances animals may become extensively diseased, and yet no suspicion of the fact be aroused in the minds of the owners of, or the attendants upon, such animals.

According to Fleming, the first perceptible signs are general dulness and indifference, and less activity and energy; with heightened sensibility of the skin, especially over the withers, back and loins, manifested by marked shrinking of the animal if these parts be pinched. There is exaggerated sexual desire—marked by continual or frequent periods of rutting; such animals being known as "bullers" (in France, as *taurelières*). They rarely breed, however, though they may now fatten or yield as much milk as if quite well. The milk is more watery, of a bluish tint, and less rich in nitrogenous matters, fat and sugar, but containing a larger proportion of alkaline salts. There is a dry, deep, though feeble cough, especially on exertion of the animal or on sudden change of temperature of the atmosphere, or on compression of the windpipe. There is not generally expectoration or nasal discharge, though at a later period exertion causes a flow of glairy mucus streaked with thick flakes. The walls of the chest become more sensitive on percussion, or thumping, and there is a duller sound. By placing the ear on the chest one may often hear, instead of the smooth respiratory murmur of air passing in and out the lungs, as in health, a harsh, rasping or loud blowing sound,

especially in some parts of the lungs. The heart's action is at times quicker and stronger; the skin, particularly towards the base of the horns and ears, is hot and dry; intermittent bleeding from the nose may take place; lameness, too, and enlargement of the glands about the neck and elsewhere. The above symptoms may continue, with little change, for months, but if no preventive or curative measures be adopted, the symptoms become intensified, and what is called the second stage of the disease is reached, and finally the third stage, with weak digestion, diarrhoea, emaciation, etc., but the symptoms of which I need not here detail.

Vet.-Surg. Grissonnanche, at the Paris Congress on tuberculosis, in July, stated that the disease is characterized from the first by tumefaction of the pharyngeal glands, irregular respiratory movements, a harsh friction sound on auscultation, with a short cough not easily provoked except by sharp percussion on the thoracic parietes, a procedure evidently causing pain to the animal.

Veyssiere, at the same congress, said that he had seized a very fat and apparently well-conditioned cow on account of symptoms of a local tuberculosis, and a post-mortem examination revealed tubercular lesions in the lungs and liver. He had injected some of the expressed juice of the meat of this cow into two rabbits, and both animals had died. Guinard said he had seen a lady patient drinking the fresh blood from a fine appearing animal, which was afterwards found to be tuberculous, and was condemned. You will remember that the pigeon, submitted by Prof. Mills, was fairly well nourished when it died.

From these facts it seems clear that the disease may be more common in any locality or country than would be apparent to the public or to any ordinary observer. Then it must be borne in mind, in considering the question of the frequency of cases, that if cows were allowed to die naturally, as human beings are virtually allowed to die, the proportion or number of cows succumbing to the disease would in all probability be much greater. Many a farmer, too, on the first signs of any failure in the health of his animal, will, from self interest; almost instinctively, at once sell it to the butcher.

Before bringing evidence before you as to the degree of prevalence of the disease in Canada, allow me to briefly quote authorities as to its prevalence in other countries: Dr. Heath, President

of the American Farmers' Club, some time ago, in the *London Medical Record*, stated that: This disease prevails extensively among such animals all over the world, and especially in populous and crowded localities. Observations in Mexico have led to the conclusion that thirty-four per cent. of all beasts slaughtered there were more or less affected with this disease, and probably fifty per cent. of the cows kept in large towns were thus diseased. The fact that this is not more generally recognized, is of course owing to the animals being slaughtered before the disorder has attained any very noticeable development. Mr. Salmon, Chief of the Washington Bureau of Animal Industry, at the last annual meeting of the A. P. H. A., declared that from "an inspection of about half a million" cattle, the "wide-spread prevalence of the disease is certain." In the second, and I think last, report of the Maine State Board of Health, is given in detail the history of the destruction by this disease of two very valuable herds within the past few years:—one, the Orono herd, in Maine; the other, that of the Willard Asylum farm, New York. At a recent meeting of the Butchers' Association in California, the agent there of the Bureau of Animal Industry, spoke strongly of the prevalence of the disease, of the "rottenness" of the cattle there, and of the great danger to the public health therefrom. At the last meeting of the British Medical Association, Dr. Alfred Carpenter said: "It had been his duty to hear evidence when application was made for the condemnation of tuberculous carcasses, and that if all such meat were prohibited it would be impossible to feed such a population as that of London." One of the principal inspectors of the largest meat market in London, he said, stated in the evidence, that sometimes as much as eighty per cent. of the meat there on sale was so affected. At this same meeting Dr. Farquharson, M.P., after discussing the subject, said: Under these alarming circumstances he held it was the duty of the Government to deal seriously with it.

About two years ago I sent out questions to a large number of veterinary surgeons throughout Ontario, with the special object of finding out the facts as to the frequency or otherwise of cases of the disease in this Province. I received a good many replies, although not so many as I had hoped for. Collectively, these went to show that, in

the opinion of the writers, the disease was not very common, but that on the whole there were a good many cases of it. Some of the respondents mentioned recent cases observed, while others wrote that although few cases came under their own observation, other veterinary surgeons had stated that they had observed many cases. One wrote, in effect, that he had reason to believe the disease common, but that stock-owners wished to keep it quiet; and he expressed a wish that his name should not be publicly mentioned in connection with this information.

At the opening address of Montreal Veterinary College in Oct, 1887, Dr. H. P. Howard, Dean of McGill Medical Faculty, in the chair, Mr. McEachren, chief veterinary surgeon of the Dominion, said: "The communicability of tuberculosis from animals to man has been proven beyond a doubt. . . . The insidiousness of this disease makes it difficult to arouse the people to its danger. The milk supply is often tested by public analysts and police inspectors to prevent its adulteration by water, but no effort is made to prove the absence of disease-germs in the nutrient fluid which forms the chief diet of infants and invalids." He was "aware that this disease was on the increase among cattle in Canada, as elsewhere."

In the ninth annual report of the Agricultural College and Experimental Farm, Guelph, Ontario, it is stated that, "The extent to which this disease exists amongst the better breed of cattle in this country is alarming, for many reasons; not the least one of which is the danger to which the public are exposed from the consumption of meat from such animals. From an economic standpoint the outlook is serious, as the annual loss must be very great, and will continue to become greater as long as so little care is observed in the selection of healthy dams and sires."

Evidently, the belief that heredity is an important factor in causing the disease, still retains its hold upon veterinary surgeons to a much greater extent than upon the medical profession.

The president of the New Brunswick Medical Society, Dr. P. R. Inches, at the last annual meeting of the society, after alluding to a number of outbreaks of the disease and to the danger to the public health therefrom, said: "Since writing the foregoing, I have learned from a reliable source of the existence of the disease in this neighborhood.

Cases are met with not unfrequently, and it is only a few days ago that the termination of one of those cases took place. The animal—a Jersey cow—had been ailing for quite a time, and was examined by a leading veterinary surgeon, who diagnosed the case as one of tubercle." The animal was isolated, quarantined, and kept under observation. After death, an examination took place, which verified the diagnosis in every particular. The case was reported to the Department of Agriculture. The veterinary surgeon tells me, said Dr. Inches, that such cases are not rare, and that the milk of such animals is used, and no doubt their flesh often eaten. His last remark to me was, "that the medical profession will waken up some day to the importance of such cases of infectious disease, and insist upon measures to prevent its propagation."

Now, from the foregoing facts and from others so well known that I have not alluded to them, the whole question may be summed up, and the conclusions which may be reasonably drawn therefrom are, briefly, as follows :

1. That, as it has been long known that glanders and hydrophobia may be communicated from animals to man, and it has been clearly demonstrated that tuberculosis may be communicated from animal to animal, from man to man, and from man to animals ; that the bacillus of tubercle found in all tuberculous matter is, in animals, so far as can be ascertained by the microscope, by their action in different culture media and their other biological characteristics, identical in every respect with the bacillus in the tuberculous matter in man ; that many of the more highly organized parasites, such as tapeworm, trichina, and other forms, are common alike to both man and animals ; that there are no known differences, physiological or chemical, between the constituents and structure of the various parts of the human body and those of the domestic animals, such as would lead to the conclusion that any parasitic organism which finds suitable conditions for its development in the latter would not find equally suitable conditions in the former ; that it appears that where cows are not to be found, tuberculosis is not common, or is quite unknown, and that many observers and investigators in both Europe and America declare, that wherever the disease is prevalent amongst cows, it is proportionately prevalent amongst the

human population ; and finally, that many cases of tuberculosis in human beings are upon record, in which tuberculous milk had been consumed as food, and as no other cause could be assigned, there was the strongest presumptive evidence that the milk was the source of the disease : it would, therefore, for these reasons, appear to be in a high degree unreasonable for us to refuse to receive as a fact the extreme probability, at least, that this disease may be, and not infrequently is, conveyed to the human body by the meat, milk and butter of tuberculous cows.

2. That although cases of tuberculous disease in cows are not known to be very common in Canada, it must be remembered that, from the attention of the public not having been specially drawn to the subject, the disease has not been suspected or looked for ; that there is abundant evidence that the disease is prevalent in many parts of the adjoining States, many entire herds there having been destroyed by it, while one of the inspectors of the largest meat market in London, Eng., in evidence before Dr. Carpenter, has declared that sometimes there was tuberculous ; that a report of the Experimental Farm at Guelph, Ontario, states that "the extent to which this disease exists amongst the better breeds of cattle in this country is alarming" ; that the chief veterinary surgeon of the Dominion, Mr. McEachren, states that the disease is on the increase among cattle in Canada, as elsewhere, while other veterinary surgeons say it is not rare amongst us, and at least one entire herd in Nova Scotia has been destroyed by it ; that the insidious nature of the disease causes it to be overlooked, and makes it difficult to arouse the public to its occurrence and danger ; that according to the best authorities, cows may be tuberculous in a marked degree and yet continue to thrive and give abundance of milk, containing the tubercle bacilli, and yet the disease not be suspected by the owner or attendant ; that as cows are not allowed to die naturally, but are slaughtered for the market, and doubtless in some cases tuberculous cows are thus disposed of before the disease has attained noticeable development, and that even in the known early symptoms of the disease—in individual cases—such animals would as a rule be sold by the owners to the butcher to prevent loss ; and, finally, that in Canada there is no

system of inspection of either live animals or slaughtered carcasses by which the proportion of cases of the disease might be estimated; it is therefore possible, and even probable, that cases of tuberculosis in cows are of much more frequent occurrence in this country than may seem at present to be the case, and that tuberculous meat, milk and butter may now be sometimes sold in the market and be a cause of tuberculosis or consumption in the human organism.

3. That this disease is well known to be infectious; that it is the rule with infectious diseases that, when no special means is employed to prevent their spread, cases will become more and more frequent, and in a constantly increasing ratio,—one case giving rise to two, three or four cases, and these again giving rise to probably four, nine or sixteen other cases; and it is to be feared that if some preventive measures be not employed, the disease may, and is likely to, soon become as prevalent amongst cows in Canada as in any other country; and that, therefore, it is most desirable, and in the interests, not only of the public health, but of all stock growers and dairymen, that some means be put into practice at the earliest possible time, with the view of preventing, while it is yet the easier to do so, the spread and increase of the disease.

CLINIC—BY T. GAILLARD THOMAS, M.D.

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This first patient has been married ten years, is a native of New Jersey, and was perfectly well up to the birth of her last child—which event occurred two years ago. As you look at her you are at once struck by two facts: first, she is excessively pallid, in the next place she does not impress you as a woman in perfect health. These are all that you observe by simple inspection. I will ask her some questions. How long have you been sick? Ans.—Two years. This is the old, old story: two years ago had the last child and ever since has been unwell; this is a very common fact, and you will meet with it again and again. At the time of her last birth she had a severe hæmorrhage and the physicians in attendance expected her to die; at that time she did not faint, but ever since has been subject to fainting spells. She menstruates

every month and is unwell for two weeks; this fact alone will explain her pallor. There are only twenty-eight days in the menstrual cycle, so that she has no time to recuperate, and as she loses a great deal of blood, she naturally gets very weak.

She suffers from cerebral anæmia; the supply of blood to the brain is small; the result of this is sometimes serious, at times she has vertigo and faints away; it was only last night she fainted, so she may be said to suffer from syncope. Syncope is a temporary cessation of the heart's action, and is secondary to something else; it is always directly due to cerebral anæmia, so that the brain does not act properly on the heart through the nervous system. During menstruation she suffers from great pain; every pain is like a labor pain; this, however, does not end in the expulsion of anything. Suppose this patient comes to you for treatment, your first case of menorrhagia; her pulse is now over 100; if a patient like this comes to your office, the first thing to do is to find out the cause, as in this case; the treatment is simple. If you cannot find out the cause, do not treat the case. Let me now tell you some of the causes of menorrhagia and metrorrhagia; not all by any means, only a few, so that you may be enabled to think out the remaining causes for yourself.

CAUSES OF MENORRHAGIA AND METRORRHAGIA.

The difference between menorrhagia and metrorrhagia is this: A woman ought to menstruate from four to eight days; if she menstruates more, then menorrhagia begins. If she flows between the menstrual periods, then it is metrorrhagia, or uterine hæmorrhage.

I. *Those due to the blood state*: as hæmophilia, scorbutus, spanæmia, and all causes due to depraved blood state and blood-vessels; this is one of the most important causes. Uterine hæmorrhage is now known to be due to rupturing of blood-vessels, and not to mere sweating of blood, as was formerly supposed.

II. *Solutions of continuity*: as (1) Lacerated cervix is a very common cause. (2) Carcinomatous and sarcomatous ulcers; hæmorrhage from these is very free. If a woman has ceased menstruating for five years and then she starts to flow freely every month, nineteen chances out of twenty there is cancer, and on examination the mystery is cleared up.

III. *Any abnormal growth connected with the*

uterus. An example is a uterine fibroid, either subperitoneal, interstitial, or submucous; also polypi. Other growths inside of the uterus will cause it, as the following case illustrates. The wife of a clergyman living outside of New York, expected to be confined last November; she went to bed, the nurse was engaged, but, on examination, the physician found the uterus only slightly enlarged. I was called in consultation, and after carefully examining the case, came to the conclusion that it was one of moles; the fœtus had died and membranes had clung to the uterus and continued to develop. I emptied the uterus of its contents and the patient is now entirely well. Under this head is included fungoid growths of the uterine cavity, which is a very common cause.

IV. *Anything that keeps up uterine engorgement.* As all flexions; flexions are very likely to occur just after parturition, when the uterine tissues are very soft. The various forms of endometritis, all ovarian irritation, may be accompanied by menorrhagia. If you take a rabbit, etherize it, lay open the uterus so that you can observe the endometrium, then, with a pair of forceps, crush the ovaries, the lining membrane of the uterus will be seen to become intensely engorged with blood. Again, many women think that it is a virtue to have a movement only once a week; these women constantly suffer from menorrhagia, this causes a varicose condition of the uterine veins. Many of the most remarkable cures I have performed, have been done by attention to the simple rules of alvine evacuation. All ovarian tumors, from pressure effects, may cause menorrhagia. To recapitulate, the causes are—

I. Blood state.

II. Solution of continuity.

III. Abnormal growths.

IV. Congestion of uterus.

Now, to find out the cause of this patient's menorrhagia. She tells us that she was perfectly well up to two years ago. On examination, I find the cervix lacerated, but this is not enough to account for the hæmorrhage; on pushing the finger further up in the anterior fornix, I feel a short anteflexion. A diagnosis is always a probability, never a certainty. During her last confinement, the cervix was torn, involution went on slowly, patient got up too soon and went about her duties, anteflexion took place, the uterine veins

were interfered with, and fungoid growths were formed in the uterus; this is all that happened, yet it is enough to cause all the trouble.

Treatment.—This patient can be entirely cured by simply going backward and correcting each step in the pathological process. Administer an anæsthetic and place the patient in the dorsal decubitus, and thoroughly douche the vagina with 1-2000 bichloride solution; then take a uterine sound and gradually straighten the uterus. Then with a blunt curette (even this is not necessary, for while out of town, I have often curetted a woman with a hairpin and a pair of forceps), carefully scrape out the fungoid growths, and be sure that they are all scraped out. Then take some cotton on a pair of long forceps and swab out the uterus with a 1-1000 bichloride solution, or, preferably, irrigate with an intra-uterine catheter. Next, pare the edges of the lacerated cervix and close it with silver sutures. Take a perforated intra-uterine glass stem and place it in position, so as to keep the uterus perfectly erect. Keep the patient in bed, put her on small doses of ergot to contract the uterine tissue and vessels. In two weeks take out the sutures, but the stem may be left in for some time, and you will find that gradually she will menstruate for only five or six days. Tell them that the first menstruation is always profuse. Instead of this woman looking pallid and thin as she does now, in six months she will have some color, weigh fifteen to twenty pounds more, and have no further trouble from syncope.

In all probability if this patient, with her pallid looks and anæmic basic murmur, had gone to an ordinary practitioner, nineteen cases out of twenty he would have given her quinine and iron. Both these medicines are powerful tonics and act as veritable poisons to patients suffering from menorrhagia; in amenorrhœa they should always be given.

REPORTS OF CASES.

To the Editor of the CANADA LANCET.

SIR,—I have thought the following case of sufficient interest to report it.

Mrs. M., multipara, was confined on Dec. 29th. Her labor was easy and natural, and the puerperium was perfectly normal until the seventh day, when she complained of having had a severe paroxysmal pain in the right inguinal region at times

during the preceding night. Upon palpation that region was found slightly sensitive to pressure; pulse 72, temp. 100.5°. Ordered her a saline mixture and vaginal injections of warm water. 8th day. No paroxysms of pain, slight tenderness in right inguinal region; pulse 72, temp. 100.5°; continued treatment. 9th day, 12.30 a.m. Was hastily summoned to see patient; found her suffering intense pain in the lower part of the abdomen, which the nurse said had come on suddenly after the patient had assumed the semi-erect posture to pass urine. Upon examination found abdomen greatly enlarged and tympanitic and tender on palpation, countenance pinched and anxious; temp. 101.5°, pulse 80. Ordered linseed meal poultices to abdomen, quinine sulphate gr. iij. every four hours, morphine sulph. gr. $\frac{1}{8}$ every hour till pain relieved; liquid diet. 10 a.m. Patient feels much easier; temp. 101.5°, pulse 80, other symptoms unchanged. Patient has received four tablets of morph. sulph. $\frac{1}{8}$ gr since last visit. Morphine to be discontinued unless paroxysmal pain returns, other treatment continued. 2 p.m., temp. 102.2°, pulse 80. 6.30 p.m. Had consultation with Dr. U. Ogden. Temp. 102°, pulse 80. Tympanitis is extreme, the abdomen being fully as much enlarged as before her confinement. Upon palpation tenderness extends as high as umbilicus. It was decided to administer the quinia per rectum and increase the amount given to $7\frac{1}{2}$ grains every four hours, in the hope that it would stimulate the coats of the intestines to contract and expel the large amount of flatus.

10th day, a.m. Nurse reports that during the night some flatus escaped, patient has had no recurrence of paroxysmal pain; abdominal distension not as marked as at last visit; temp. 99°, pulse 72. Discontinued quinine and ordered sodæ et potassæ tart. ʒj. every three hours, and injections of tepid water to be repeated every two hours. 6 p.m. During the day injections have brought away a small amount of fecal matter, some flatus also escaping; temp. and pulse same as morning. Abdominal walls were relaxed, and less tympanitic; patient bears ordinary palpation of abdomen without any complaint. Same treatment to be continued, also ʒj. whiskey every two hours.

11th day. During the night patient has had considerable rest and taken nourishment well; passed some feculent matter and flatus and appear-

ed to be progressing favorably until about 7.30 a.m., when nurse became alarmed at her condition and sent for me. At 8 a.m. I found her in collapse; extremities cold and whole body covered with a cold, clammy perspiration. Pulse 80, very soft and compressible; temp. 97° in rectum. Complained of nausea and faintness; abdomen was much distended, no tenderness. Applied artificial heat by means of bottles of hot water to body and extremities, as well as friction. The perspiration was excessive, standing out in great drops over the entire surface, almost immediately after it had been removed by towels. Administered six syringefuls of whiskey hypodermatically, and gave small quantity by the mouth during first hour. Patient then vomited a large quantity of partially digested food, and this relieved the nausea, so that she was able to take ʒss. whiskey every fifteen minutes by the mouth. This treatment was continued. About two p.m. there were some evidences of reaction, and by 5 p.m. natural heat was restored to the surface and perspiration had abated. At 6.30 had another consultation with Dr. U. Ogden. Pulse 80, weak, temp. 99°. Tympanitis was now considerably increased again; no tenderness. Treatment ʒiv. whiskey, ʒj. egg and milk mixture every hour. Rectal injection of castor oil and turpentine in thin starch. 9 p.m. No action of bowels; repeated injection, omitting turpentine. Injection was retained for two hours and then expelled. Then ordered an injection of four ounces warm castor oil.

12th day, 9 a.m. Bowels have not acted during night. Patient has taken nourishment well, and appears stronger; pulse 72, temp. 99°. Ordered ʒj. castor oil and ʒi. turpentine by mouth. At 12 o'clock there was a movement of the bowels, containing some lumps of hardened fecal matter, but principally composed of softened fecal matter and oil in an active state of fermentation, the gases making their way to the surface of the mass at all parts while under observation. The amount passed at this evacuation filled the bed-pan, a large amount of flatus also escaped. Bowels continued to act during afternoon, in all, four times, one of the dejections being as large as the above, the others somewhat smaller. 6 p.m. No tenderness, no tympanitis; pulse 72, temp. 99.5°.

13th day. Patient is improving; takes nourishment well, has no pain.

After this date convalescence progressed speedily and uninterruptedly. The remarkable feature of this case was the sudden and unexpected onset of collapse on the morning of the 11th day, which was no doubt due to the absorption of the products of fermentation of the matters contained in the intestinal canal. Patient was unable to account for so large an accumulation of faecal matters in the intestines, as she says bowels were always regular before her confinement. And subsequent to that time and previous to the onset of the symptoms detailed above, she had taken three doses of castor oil, after each of which the bowels acted freely. The subject of ptomaine poisoning has been receiving considerable attention of late years, and from the variety of symptoms produced by these fermentation products, it is evident that the products themselves are different in almost every case, some slight cause being sufficient to change the type of fermentation. We sometimes see them accompanied by very irritant properties. In the present instance the action seems to have been more that of an antipyretic and depressant. I might also say that repeated examination of urine failed to reveal any kidney trouble.

Yours truly,

L. F. MILLAR.

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Correspondence.

OUR NEW YORK REPORT.

From our own Correspondent

NEW YORK, Feb. 19th.

"A NEW METHOD OF TREATING FRACTURES OF THE PATELLA BY SUBCUTANEOUS LIGATURE WITH SILK."

Prof. Lewis A. Stimson, who is probably the recognized authority on fractures and dislocations in New York, is just now advocating a novel and to all appearances an exceedingly simple and rational method of treating fractures of the Patella. It is known as the subcutaneous ligature with silk method. The great desideratum to be obtained in the treatment of these fractures is some simple appliance whereby the fragments may be held in close apposition, and at the same time one which will not interfere with the nutrition of the patella

by pressure on the articular arteries and thus prevent rapid union; it is now believed that this difficulty has at last been overcome.

The method of procedure is as follows: suppose, for example, the patient has a transverse fracture of the right patella. The patient is etherized and the skin over the part thoroughly scrubbed with soap and water, then douched with 1-2000 bichloride, and finally washed with ether. With an ordinary scalpel, four incisions are made in the following manner: the skin and subcutaneous tissue only being divided, and, for the sake of description, we will suppose the patella to be possessed of four angles. The incisions are so placed, that each angle of the patella has an incision situated a little distance from it, thus; the *first* is situated a little below the inferior and internal angle, the *second* a little below the inferior and external angle, the *third* a little above the superior and internal angle, the *fourth* a little above the superior and external angle. Then a straight Hagedorn needle armed with a No. 14 heavy braided silk ligature, which has been previously rendered perfectly aseptic by being boiled (one of the essentials of success is that there shall be no suppuration), is introduced into the lower and internal incision and carried deeply through the ligamentum patellæ and brought out at the inferior and external incision. It is then re-introduced and carried deeply through the tendon of the rectus and crureus muscles and brought out at the superior and internal incision. It is again re-introduced and carried beneath the skin along the internal border of the patella, and brought out at the interior and internal incision. The leg is now elevated so as to relax the quadriceps extensor as much as possible, in order that the fragments of the patella may be as closely approximated as possible. Strong traction is now made on the silk and the two ends are firmly knotted deep in the subcutaneous tissue. During this part of the operation considerable force may be used so as to bring the fragments closely together. The cutaneous wounds are then irrigated and dressed with a simple antiseptic dressing, the leg elevated, and a straight posterior splint applied for about three days. At the end of this time the dressings are removed, and if proper antiseptic precautions have been taken, the incisions will be found completely healed. The knee is then encased with a

plaster paris dressing for two weeks, when it is taken off, and the patient allowed to hobble around the ward on crutches, and gradually use his leg. As to the length of time the plaster bandage should be worn in order to secure the best results, it may be stated that this point has not been determined, as the method has not yet had sufficient trial in order to decide this point. So far, however, the cases in which it was discarded after two weeks' use appear to have done the best, as the union seemed quite as firm as those cases in which it had been worn for four weeks, and there was less stiffness of the knee. In every case, so far, very satisfactory results have been obtained, and in one case which your correspondent had the opportunity to examine, after three weeks the separation was less than $\frac{1}{4}$ of an inch. It is recommended that if the case comes under observation before inflammation and effusion into the joint have taken place, to at once perform the operation; but if inflammation and effusion have taken place, it is better to wait until they have subsided. Some may ask, what eventually becomes of the silk. In the cases so far nothing has been seen of it, which is due to antiseptic precautions, and it remains under the skin, acting as a firm splint, holding the fragments together, and this explains why the plaster paris dressing can be discarded so early. To contrast the results obtained by this method and those by wiring, would be premature, as the method has only been on trial for a short time, but it may be stated that wiring the patella has fallen into disrepute in New York. In nearly every case it has resulted in a stiff knee-joint, and in some suppurative synovitis has followed, so that the joint was completely ankylosed, and many surgeons here have almost abandoned the operation and fallen back to the old method of splints, etc., except in those odd cases where the separation of the fragments has been so great as to render the limb almost useless. The one is a grave operation, the other a simple procedure, and the general impression is, that it is the best plan yet proposed, and is destined to completely revolutionize the treatment of this important fracture.

FOR HICCUGH.—Dr. Wm. C. Wood, writing to the *Med. Reg.*, speaks in high terms of *viburnum prunifolium* in singultus. He states that drop doses of the fluid extract never fail to relieve.

Selected Articles.

MENSTRUATION, ITS NERVE-ORIGIN— NOT A SHEDDING OF MUCOUS MEMBRANE.

In every healthy human female, during the so-called childbearing epoch, which extends, on the average, over a period of thirty-two years, the uterus becomes the seat of a periodically recurring functional disturbance, evidenced by the emission of a more or less marked hæmorrhagic discharge. As the initial establishment and each subsequent recurrence of this monthly phenomenon is frequently accompanied by symptoms of a general as well as local character, we shall designate under the appellation *menstruation* the whole essential train of events, and not its mere outward manifestation.

The molecular world, organic as well as inorganic, exists in a perpetual state of trepidation, and equilibration of a vital character is the outcome of an inherent power of adaptation. Normally the structural and functional integrity of the organism is maintained by a mutual dependence of the organs upon each other, and according to the manner in which these, each and all, respond to those multifarious changes which, from time to time, arise in the environments of the individual. The variations in the waves of molecular motion occurring in every organ, and associated with physiological activity, are radiated to, and affect, however feebly, every ultimate tissue of the body. So completely is this intercommunication, through the medium of the nervous system, carried on, and so apt are the different structures of the organism to perform functions other than those for which they have apparently become specialized, that vicarious compensation may be readily established. In the case of double organs it is a noteworthy fact with which everyone is familiar, that the removal of one may affect but little, if at all, the well-being of the body; generally the remaining organ at the same time becomes of augmented functional activity, undergoing slight or even well-marked enlargement. This compensatory change will be manifested, not only by organs recognized as active, but also by such as have hitherto been viewed as obsolete. In many of the lower organisms, where structural differentiation is ill defined, vicarious function is readily fulfilled. The animal may, for example, be turned outside-in with impunity, the vital integrity of the organism being still maintained unimpaired—the endoderm, already but feebly specialized, although set apart for assimilation, performing with ease the function of the ectoderm, that of elimination; while the ectoderm, in turn, assumes forthwith the power of assimilation, and

discharges effectually a function hitherto foreign to it and performed previously by the inner layer. In the animal economy we see constantly enunciated the fact, too frequently ignored, that functional activity and structural integrity proceed together, hand-in-hand, and are regulated by a mutual action and re-action upon each other.

If the functional activity of any organ be augmented, but not unduly, the structural integrity will be maintained and be rendered more perfect. Again, the more complete the structural arrangement has become, the more likely we are to find the function actively performed. All visceral activities are now, through habituation, fulfilled in a somewhat automatic manner; and although these transitional states may at one time have excited a conscious sensation, they are at the present stage of evolution wholly ignored by the higher cells of the cerebral lobes which participate in feeling. What is true of one organ of the body is likewise true of all the others. It is, therefore, more than probable that the physiological changes recurring from time to time in the uterus are anticipated by, and in reality the sequence of, a molecular disturbance arising spontaneously in some center located in the higher part of the cerebro-spinal tract, possibly somewhere in the medulla oblongata. The mere fact that the functions of the uterus may be revealed uninterruptedly after the spinal cord has been completely severed in the dorsal region is no criterion, and cannot justify us in concluding that there exists no representative higher centre. Structural evolution itself forbids the acceptance of such an hypothesis. Like all other nerve centres fulfilling a similar dispensation, this uterine centre is undoubtedly beyond all volitional control, but is, nevertheless, capable of being disordered by emotional impressions. With this fact everyone is familiar. A sudden shock experienced during menstruation, and apart from any bodily injury, will produce, as I have frequently noted in some females, immediate cessation of the flow, and even interrupt for a more or less indefinite length of time thereafter, its amount and periodic regularity. The resulting disturbance will depend essentially upon the state of the nervous system and its proneness to molecular instability.

With the approach and appearance of the monthly flow the whole frame, as one would naturally expect, participates more or less in the change, and the amount of disturbance experienced, as well as manifested, is commensurate with the power the organism possesses of adaptation, and hence of equilibration. The simple determination of blood, because of increased functional activity, to the genital and, in many cases, to the other pelvic organs, of itself produces a definite alteration in the waves of molecular motion proceeding therefrom, and which, radiated in all directions,

must necessarily affect the vascular state of other very important structures. In many chronic disorders, of whatever system, affecting the female, every observer must have remarked that, according to the menstrual type of the individual, there is often, either in anticipation or with the appearance of flow, a proneness to aggravation, or in some very exceptional cases, it may be, to alleviation of symptoms; and with the cessation or disappearance a corresponding gradual reversion to the original already stationary or slowly progressive state. In some few cases the loss of blood may account for much of the disturbance manifested, yet it cannot be the sole factor. In many women, where, from some inexplicable cause, there is for a more or less indefinite period a total suppression of the characteristic discharge, we may detect frequently such a regularly recurring alteration in the symptoms or manner of the patient as to place beyond denial a direct relationship. In no class of functional disorders do we find so regularly and markedly an interference with the outward manifestation of uterine activity as in *epilepsy*, a disease the pathology of which is still undetermined. It is more than probable, however, that as we may consider the *epileptic female* as *epileptic* throughout, even to the finger-tips, the interruption of the periodically recurring functional change in the uterus is the result of some occult condition of the corpuscular elements governing the activity of this organ, and wholly independent of any defective structural state of the viscus itself. The structural integrity of the uterus, may, however, eventually suffer, for inaction and overaction alike tend to exert a prejudicial influence.

Gestation, as a rule, although not invariably, determines for a period of nine months a cessation of the monthly recurring flow. Not infrequently, however, we see women who throughout one or more pregnancies continue perfectly regular, the amount or character of the flow being unaltered by the physiological process going on in the uterus. Usually the fertilized ovum affects in some unknown manner the uterine organ, thereafter destined to be its source of nutrition, and the gradual molecular variations so produced are radiated to the uterine centre, after the corpuscular state, and determine the sequence of events. During the period of lactation, and consequent activity of the mammary glands, we find not only the manifestation of the monthly recurring functional change of the uterus held in abeyance, but also the activity of the generative glands, as impregnation rarely occurs while the mother continues to suckle the offspring. Should, however, lactation be prolonged indefinitely, the secretion of milk may become more or less habitual, as in the case of the cow, and the generative glands regain their activity. The life of every organism is twofold: first,

the maintenance of the individual, and then the perpetuation of the species. The latter, however, is always subservient to the former, and so long as there exists a demand for nourishment from the mother on the part of the child in utero, so long will the reproductive power, as a rule, continue latent. Occasionally, however, I have noted that while the child is being suckled by the mother, the uterus itself, and the generative glands, may throughout continue active; and impregnation resulting, signs of early constitutional enfeeblement are apt to accrue. In inflammation of the mucous lining of the Fallopian tubes with puriform exudation, menorrhagia is frequently an associated symptom, and apparently results from some interference with the nerve supply to the uterus. In all mammals there are two ovaries, and the oviducts are known as the Fallopian tubes. Each oviduct dilates, on its way to the external surface, into a uterine cavity, which in turn opens into the vagina. In the monkey and man only do we find the uteri coalesce inferiorly, producing a single cavity, into the fundus of which the Fallopian tubes enter. It is more than likely that the nerves governing the functions of the uterus are transmitted along the Fallopian tubes, and although menstrual disorder may frequently result, with distinct pathological changes existing in these tubes, we must not too hastily conclude that these structures, *per se*, govern the uterine changes.

The true nature of the catamenial discharge is still conjectural; yet its elimination from the body renders it highly probable that, having already served some special end, its detention in the blood may exert some deleterious influence on the animal economy.

It is generally admitted that ovulation and menstruation are coincident; that they may or may not be, I am not prepared to dispute; that, however, they are invariably associated, there seems to me much room for doubt. That the discharge of an ovum may, and frequently does, occur quite independently of menstruation, I have no misgivings. No one would entertain the idea of gauging the reproductive power of the female either from the regularity or amount of the catamenial discharge. I have occasionally noted that women who menstruate with marked irregularity are specially prolific.

It is alleged as an established theorem, that from the period of puberty to the climacteric age there is, besides a gradual death of the mucous membrane lining the whole uterine cavity—which must ever occur to be compatible with life—a more or less regularly recurring and complete death of this coat. In the whole animal kingdom we search in vain for a physiological change truly analogous with this. The serpent, it is true, may shed its skin more or less intact; but ere it casts off the old coat a new one is already regenerated, to

protect its body from all extraneous injurious influences. In vital structures change is wont to be gradual—creation and destruction proceed together. There is apparently no departure from this inexorable law. Death of the mucous lining of the uterus takes place imperceptibly; the change is one ever going on, as in all organs of the body.

In several cases I have examined uteri removed from women who have died, not only during menstruation, but just before an expected period. In two cases the death was sudden, the patient at the time being in apparent good health. In three cases the uterine organ was invaded by growths of a fibroid character, which were chiefly submucoid. To the naked eye the mucous lining, in all, appeared in every respect like that of a normal uterus examined at any time indiscriminately. In no case did I detect any breach in the continuity of the lining membrane of the uterus, except in those in which this organ had become the seat of fibroid growths. In such the mucous lining had in places become markedly thinned, or even vanished altogether, because of a constant vital pressure exerted on this coat by the underlying new growth. Here gradual absorption had resulted, very much in the same manner as bone and soft tissues disappear before the constant pressure of an increasing aneurism. I have never at any time detected any evidence of structural change, microscopically, in the inner linings of the uterus, in cases in which this organ has been removed from the bodies of females who have died either during or just before an expected menstruation. The glands which stud the inner coat of the uterus in its entirety, consisting of columnar cells, lined by a basement as well as a limiting membrane, have, however, shown marked enlargement, in many cases so pronounced that the outline, not only of the separate cells, but even that of the gland itself, has been lost. The columnar cells appear swollen, and contain frequently large corpuscular-looking bodies, which I believe to be the simple manifestation of increased functional activity. Prior to cutting, by freezing in gum the tissues had been hardened for two days in spirits, and finally in a weak solution of chromic acid. The sections I stained in a variety of ways, my best stain, however, and that affording clearest definition, being *iron* and *pyrogallous acid*.

Those who support the denudation theory assert that each recurring monthly flow is anticipated by a fatty degeneration of the mucous lining of the uterus; that blood is extravasated into its substance, and eventually the whole, becoming disintegrated, is washed away imperceptibly with the escaped blood. A new mucous membrane is thereafter by degrees regenerated from the inner layer of the muscular coat, which, in its turn, too, like its predecessor, must undergo a similar degen-

erative change, and ultimately be removed from the body. Some of the lower animals, it is true, retain the power of reproducing limbs and possibly other parts of the body removed by accident. If, however, the separation of the part be too frequently practiced, we eventually exhaust the power—wholly irrecoverable—the structural integrity of the regenerated limb or tissue becoming less and less marked with each removal. Clinically, if the mucous membrane were shed with each catamenial flow, it must be capable of completing its cycle of degeneration, shedding and regeneration, in an incredible number of days. Many are the menstrual anomalies which preclude the acceptance of such a phenomenon.

Taking all the facts into consideration, it is more than probable that the recurring monthly discharge in the human female is a secretion, or rather excretion, from the inner lining of the uterus and Fallopian tubes, without degenerative change other than that commonly associated with augmented functional activity, and comparable with that occurring in any other organ of the body under similar circumstances.—*Alienist and Neurologist.*

ON PHANTOM TUMORS OF THE ABDOMEN.

Phantom tumors may present themselves in any part of the abdominal cavity. They vary in size and shape, but they rarely exceed a man's fist in size, and are usually of an oval or rounded shape. They may be as large as a child's head. The epigastric region is their favorite situation. Their peculiarities are that they are very variable in their appearance; a tumor may be found at the first examination, but on the succeeding day it may have entirely disappeared, and perhaps during the examination it will again become evident. These tumors come and go without apparent reason. When present they often closely simulate actual growths, being quite resistant to pressure and usually somewhat sensitive. On percussion they are somewhat resonant; at other times they yield but little resonance, the note indicating that there is a considerable amount of solid matter between the finger and any gas in the intestine. These tumors are for the most part movable. They appear in persons of a neurotic temperament and are associated with other phenomena of disturbed innervation.

Phantom tumors are dependent upon one or two things: Either upon irregular muscular contractions in the walls of the abdomen, with spasm of certain groups of fibres and the formation of knots in the muscles, or else upon spasmodic contraction of some part of the gastro-intestinal canal, with the imprisonment of gas and the formation of a rounded tumor, with the walls of the intestine in a state of spasm and with the ab-

dominal muscles grasping it more or less spasmodically. This accumulation of gas may take place in the colon, in the small intestine, or even in a portion of the stomach. These bodies will often simulate intra-abdominal growths of various kinds. Their proper nature is to be recognized by a consideration of the general health, the peculiar neurotic state of the system, the variability as regards the presence of the tumor and its position, the absence of symptoms of obstruction of the stomach or intestines, the result of careful palpation, the fact that the tumor will sometimes disappear under the use of gentle manipulations and suddenly reappear when the surface is irritated, and the fact that the tumor entirely disappears when the patient is etherized.

Phantom tumors are not to be confounded with the movable abdominal tumors which come and go, and which are actual tumors, such, for instance, a floating spleen, a floating kidney, or a fibroid tumor of the uterus with a long pedicle allowing it to appear in different parts of the abdomen. All these floating tumors disappear at times to reappear when the patient assumes a different posture, or when the relations of gastro-intestinal canals are altered. These are to be distinguished by the absence, in the case of the kidney and spleen, of the organ from its normal position as revealed by percussion, and by the fact that they admit of careful palpation, and can be grasped by the hand, and, if the patient is etherized, can be examined minutely so as to remove every possibility of doubt. Moreover, in the case of a uterine fibroid, it can often be pressed down so as to admit of bimanual examination with one hand in the vagina and the other on the abdomen. A consideration of these facts, with the long duration of the tumor and the previous history which points to conditions that would favor the displacement of an organ, will enable you to decide that there is a true abdominal tumor.

I should have mentioned before, that, in distinction between phantom tumors and movable tumors of the abdomen, nothing requires more careful consideration than the possibility of fecal accumulation. This must never be absent from our minds whenever we approach a case of abdominal disease, for fecal accumulation is a factor in a vast number of instances of abdominal trouble. When a mass is found in the abdominal cavity, no matter what its position, size, shape, or consistence, the possibility of its being a fecal accumulation is never to be forgotten. This is especially true if the mass is oval in shape, somewhat movable, not very painful, and not associated with evidence of marked derangement of the general health.

The treatment should consist in the regulation of the diet, attention to the bowels, and the use

of remedies to allay the nervous condition of the stomach and the hyperæsthesia of the abdomen. For this purpose I order four or five grains of bromide of sodium and a drop of dilute hydrocyanic acid to be taken after meals. The patient should also take with the meals a little pepsin. In order to draw the attention from the stomach, it is, I think, well to apply to the epigastric region some strong counter-irritant. I should have tincture of iodine repeatedly applied over this part of the abdomen. Under this treatment there should be decided improvement.—Wm. Pepper, M. D., in *N. Y. Med. Jour.*

CREASOTE IN THE TREATMENT OF PHTHISIS.

In a recent number of the *New York Medical Journal* and in the *American Journal of Medical Sciences* for January, 1889, are articles by Drs. Austin Flint and Beverley Robinson, in which the use of creasote in pulmonary affections is commended.

Dr. Flint's cases (reported) were well marked cases of phthisis pulmonalis, and were treated by creasote inhalations from a perforated zinc inhaler (Hazard, Hazard & Co.) and by the same medicine given internally in the dose of three or four drops t.i.d. The inhaling fluid (Beverley Robinson's formula) consisted of equal parts of spirits chloroform, alcohol, and creasote; the inhalers were generally worn almost constantly except at night. Dr. Flint concludes that the records of the ten cases reported show that creasote by the stomach and in inhalations, in cases of solidification without cavities, effects prompt and decided improvement in all phthisical symptoms, with increase in appetite, weight, and strength; in cases with small cavities there is much less improvement; and in cases with large cavities the treatment seems to have little more than a palliative influence.

Dr. Beverley Robinson's article gives the results of the use of creasote by mouth and by inhalations in sixty-six cases. These results have convinced him that "we have in beechwood creasote a remedy of great value in the treatment of pulmonary phthisis, particularly during the first stage. Not only does it lessen or cure cough, diminish, favorably change, and occasionally stop, sputa, relieve dyspnoea in very many instances; it also often increases appetite, promotes nutrition, and arrests night sweats. It does not occasion hæmoptysis, and rarely causes disturbance of the stomach or bowels except in cases in which it is given in too large doses."

Dr. Robinson does not venture any opinion as to whether creasote has any anti-bacillary effect; he affirms, however, that it may be used to advantage in all stages of the disease, and in his experi-

ence it has proven itself superior to any other medicinal treatment with which he is familiar. He has been in the habit of ordering in phthisis dessert spoonful doses of the *mistura creasoti* of the United States Pharmacopœa. He combines the internal use of creasote with the antiseptic inhalations above mentioned. The formula is, however, ever varied; a combination of chloroform, iodoform and oil of eucalyptus with the creasote often being used. As a rule, in the beginning, the inhaler is worn during fifteen or twenty minutes every three hours, and from ten to twenty drops of the inhaling fluid are poured on the sponge of the inhaler at least three times in twenty-four hours. Dr. Robinson speaks well of the internal administration of creasote along with cod-liver oil, one minim to the drachm of the oil. Another favorite way of giving creasote is in combination with whiskey and glycerine according to the following formula:—

R.—Creasoti (beechwood). min. vi.
Glycerine (Price's or Bower's). $\frac{3}{4}$ i.
Whiskey. $\frac{3}{4}$ ii.

M.—Dose. A dessertspoonful every two or three hours.

Dr. Robinson insists on the necessity of the purity of the creasote, and has especial confidence in the product of T. Morson & Son, an English firm.

From the last *Annuaire de Therapeutique* we learn that for the past nine years Dr. Sommerbrodt, of Berlin has administered creasote to nearly five thousand phthisical patients.

In almost all the patients, this medicament has caused amelioration of the symptoms, those only failing to be benefited in whom the pathological process was far advanced, and had invaded a great number of organs. "In cases relatively recent (initial hæmoptyses, catarrh of the apices, limited infiltrations) creasote gives surprising results; conservation of the forces, diminution of the cough, of the expectoration, increase of appetite, lessening of the night sweats and fever; lastly in many cases disappearance of the physical signs, notably of the percussive dulness, especially in young subjects." Sommerbrodt gives the creasote in gelatine capsules each containing a grain of creasote and four grains of syrup of tolu. Three of these capsules are taken after each meal. The dose is gradually increased as the stomach will bear. Sommerbrodt finds that "the greater the quantity of creasote which the patient can tolerate, the more efficacious is its action." In some instances he has given as much as forty or forty-five centigrammes daily (seven to nine grains) for months.

We learn from the *Berlin klin. Woch.* that Kartzler has published observations of sixty-one cases of phthisis treated by creasote, giving also the results obtained by the same treatment in a hundred other cases. In ten per cent. he has noted what he considered complete recovery, the physical

signs disappearing, and bacilli being no longer present in the sputa. In forty per cent. he has obtained amelioration, so that the patients have been able to resume their occupations. His favorite formula is as follows: Beechwood creasote, two grammes; pure alcohol, thirty grammes; tincture of gentian, extract of coffee, of each ten grammes; distilled water, one hundred grammes. Shake, and take a dessert-spoonful three times a day in half a cup of milk.

This mixture, according to Kartzer, is almost invariably well tolerated.—*Boston Med. and Sur. Jour.*

THE MEDICINAL TREATMENT OF MENSTRUAL DISORDERS.

The treatment of symptoms alone, without regard to the underlying condition, of which the symptoms are but the expression, is often looked upon as unscientific and unworthy of the consideration of the true physician. It is, indeed, unscientific, and were it possible always to discover and remove the cause it would be equally irrational and unjustifiable. But unfortunately we are unable always to act upon this principle. We cannot always discover the cause, and, knowing or suspecting it, we are often unable to remove it. This is noticeable so in regard to menstrual irregularities, especially as occurring in young women. The general practitioner is often asked to relieve cases of this nature in girls, who would never submit to an examination or operation, preferring rather to suffer pain indefinitely than the shame of a physical investigation into the nature of their trouble. In such cases the physician is forced to try the effect of medicinal agents, groping it may be, in the dark before insisting upon an examination. Such being the case, it is well to learn what remedies have been found to be of occasional service in relieving symptoms of this nature which are not dependent upon actual organic disease.

In a very practical paper, read before the Connecticut Medical Society at its annual meeting in 1888, Dr. Gideon C. Segur, of Hartford, presents a general view of the subject, giving the results of his own experience and quoting the opinions of several prominent gynecologists whom he has consulted. A brief *résumé* of these opinions is all that can be presented here, the reader who may desire a more extended presentation of the subject being referred to the original paper.

Amemorrhœa.—For this condition most of the authorities consulted recommended general tonics, iron, arsenic, and cod-liver oil. Permanganate of potassium, which was at one time so strongly recommended, does not seem to be in much favor, the objection to it being that it is too irritating to the stomach. Manganese was advised by some, and this is the remedy that the author has found

to give the most satisfactory results. Most of the salts of this drug, however, cause so much gastric irritation that they cannot be used in most cases, but; the binocide seems to be an exception in this respect, Dr. Segur having used it in many cases with the happiest results and without seeing any disagreeable effects caused by it. A disagreeable feature of this remedy, in Dr. Mundé's experience, though apparently not in the author's, was its unreliability. It might afford relief at one time, and yet at another, even in the same case, and seemingly under the same conditions it would fail utterly to bring on the menstrual flow. The lactate of manganese is also free from the irritating action upon the stomach that most of the other salts of the drug exert. Manganese has the reputation of being an abortifacient, hence some caution is necessary in its use as an emmenagogue. But the maximum dose employed by the author is six grains a day, and this is far below that which has been used to produce abortion.

Dysmenorrhœa.—The opinions of the authorities consulted by the author concerning this symptom and its relief were most varied. Some thought no benefit could be obtained by any but operative measures, while others spoke hopefully of many remedies. Among those which seemed to have given most satisfaction to the writers were pulsatilla in three to five drop doses three times a day; cannabis indica, viburnum, camphor, belladonna, and antipyrine. Dr. Segur found manganese to render good service in these cases also, in many instances. The binocide was used in doses of six grains per diem. The application of heat, by means of the sitz bath or douche, was a useful adjuvant to the internal medication.

Menorrhagia.—For this condition the most efficient remedies were found to be ergot, hydrastis, digitalis, sulphuric acid, fluid extract of gossypium, and gallic acid.

It is rather strange to find such a want of unanimity in the recommendations of these different authorities concerning the most efficacious medicinal agents for the relief of menstrual disorders. It is rather discouraging, also as the number of remedies vaunted as useful in any particular trouble is generally in inverse proportion to its amenability to treatment. Yet, notwithstanding the discouragements which those who attempt to treat menstrual disorders by drugs often encounter, the physician is many times powerless to treat them in any other way. Dr. Segur has, therefore, rendered good service in collecting the opinions of so many experienced gynecologists, and in giving the results of his own efforts to relieve sufferers of this class, and we hope that the paper will be useful to many who may perhaps be able occasionally to cure some of these disorders by one or other of the remedies mentioned by the author.—*N. Y. Med. Rec.*

MEDICAL NOTES.

Ordinarily, one woman in eight is *sterile*; but in women who have fibroids, one in three is sterile. (Parvin).

In *facial erysipelas*, where you cannot conveniently apply ordinary means, paint the part with a 10% iodoform collodion. (Prof. Gross).

For a case of *trifacial neuralgia*, Prof. DaCosta ordered five drops of tinct. of gelsemium t. d., increased until double vision results; also a full diet.

In *posterior displacements of the uterus*, always replace the organ before introducing a pessary; the frequent failure of its use is generally due to this cause. (Parvin).

Where there is a collection of foreign matter, as pus, in the *antrum of Highmore*, extract the first molar tooth (or more, if necessary), and drain the cavity in this way. (Sajous).

For *universal eczema* in a child, Dr. Rex ordered bran baths and—

R.—Acid. salicylic, gr. xv.
Vaseline, f ̄ j. —M.

Sig.—Use locally three times a day.

For *alopecia*, Prof. Bartholow recommends—

R.—Extract. pilocarpus fluid, f ̄ j.
Tinct. cantharidis, f ̄ ss.
Liniment. saponis, f ̄ ijss. M.

Sig.—Rub into the scalp daily.

The following are the *means of arresting hæmorrhage*, arranged in their order of usefulness: ligature, torsion; acupressure; compression, forced flexion of a limb; styptics; and the actual cautery. (Prof. Gross).

For *specific vaginitis*, Prof. Parvin ordered mucilaginous injections and warm hip baths in the acute stage, followed by injections of 1 to 1,000 corrosive solution and tampons of boracic acid and glycerine.

For *fractures of the forearm* in the middle third or low down, Prof. Forbes uses two straight splints extending beyond the finger ends, thus keeping the fragments from being displaced by movements of the fingers, which is liable to occur if a short splint, like Bond's, is used.

Prof. DaCosta prefers the use of the bismuth *test for sugar* in the urine. Take equal parts of urine and liquor potassæ, add a pinch of bismuth subnitrate, boil thoroughly. If sugar is present, the powder turns brown or black.

For *diabetes mellitus* in a man æt. 44 years, in addition to the usual regulation of diet, Prof. Da Costa directed saccharine as a substitute for sugar to sweeten coffee, etc. Also half a grain of codeia morning and evening.

For *ptyalism*, Prof. Gross advises thirty grains of potassii chloras every four hours, and—

R.—Liquor. plumbi acetat., f ̄ j.
Aque destillat., f ̄ viij. M.

Sig.—Use as a mouth wash.

Prof. DaCosta recommends for the *sore throat of scarlet fever*—

R.—Thymol, gr. iv.
Glycerini,
Aque destillatæ, āā f ̄ j. —M.

Sig.—Use as a wash (dilute further, if necessary).

As an external application to *enlarged lymphatic glands* in the neck of children, the following is efficient:—

R.—Potassii iodidi, ̄ j.
Vaseline, ̄ j. —M.

Sig.—Rub in thoroughly three or four times a day. (Dr. O. P. Rex).

The following formula is used for the introduction of medication into the uterus or vagina for the prevention of or during *puerperal sepsis*, at the Philadelphia Lying-in Charity Hospital:—

R.—Iodoformi, gr. lxxv.
Pulv. acaciæ,
Pulv. amyli,
Glycerini, āā gr. xv.
Gelatin., gr. iiss. M.

Ft. bolus j.

(Dr. Charles Meigs Wilson).

For a case of *quinsy*, seen in the first twenty-four hours, the treatment is simple. Add one drachm of ammoniated tincture of guaiac to a teaspoonful of milk; gargle and swallow every three hours; after the third or fourth dose the swelling of tonsils subsides and patient is much relieved; most likely he will have a diarrhœa; this is the time to reduce the tincture to one-half drachm. When the case goes thirty-six hours without interference, the treatment is different and difficult. Allow small pieces of ice in the mouth, while internally, twenty grains of bromide of potassium combined with fifteen drops of wine of ergot, or six drops of tincture of belladonna every three hours, although the latter frequently causes headache; if tonsil has a tendency to go to abscess, do not let it rupture spontaneously; find tender spot with finger; take a curved bistoury and open, not cutting deeply (Sajous). — *Coll. and Clin. Record.*

THERAPUETICS OF BRIGHT'S DISEASE.

Classic Regimen:—Climatic precautions consist in avoiding humidity and rapid changes of temperature. In dietetics the patient is told to avoid highly spiced and irritant foods; avoid eggs, wines,

liquors and beer and to confine himself to the milk diet, either absolute or mixed.

Senator's Regimen.—This permits the use of white meats, including pork, starchy and herba- ceous foods, fruits, fats and milk. It also allows wine diluted with water. It forbids all red meats.

Semmola's Regimen.—This consists in the ob- servance of the foregoing rules and as an internal remedy its author prescribes the following, to be taken daily :—

R.—Potassium iodide. grs. xvi.
Sodium phosphate. ʒ ss.
Sodium chloride. ʒ iss.
Water. O ij.

Mix and dissolve.

This amount suffices for twenty-four hours, and is to be taken at convenient intervals.

Bamberger's Regimen.—This prescribes the rigid adherence to the milk diet, and assists it with tonics and iron. Its author recommends the following :—

1. Pills of perchloride of iron after the follow- ing formula, from 3 to 6 to be taken during the twenty-four hours :—

R.—Perchloride of iron. ʒ ss.
Marsh trefoil (menyanthes trif.)
in powder. ʒ iv.
Extract of taraxacum, sufficient.

Mix and divide into 100 pills.

2. Pills of sulphate of iron. For these Bamber- ger prefers Wiethé's formula as follows :—

R.—Sulphate of iron. ʒ iv.
Sodium bicarbonate. ʒ iv.
Extract of taraxacum, sufficient.

Mix and make into 60 pills, of which 3 are to be taken in the morning and a similar number on going to bed.

3. Infusion of cinchona bark, made by exhaust- ing 300 grains of the contused bark with 6 ounces of boiling water, and sweetening with half an ounce of syrup of orange peel. A tablespoonful of this infusion is to be taken every two hours.—*Rev. Gen. de etc.*

GLANDERS AS AN INFECTIOUS DISEASE.

The following letter, upon the subject of gland- ers as an infectious disease, and the propriety of killing animals suffering from said disease or farcy, as soon as recognized, is published for the infor- mation and guidance of the Army :

BALTIMORE, July 24, 1888.

To the Quartermaster-General U. S. Army,
Washington, D.C.

GENERAL.—In reply to your communication of July 16, I have the honor to submit the following statements and opinions :

Glanders is an infectious disease in which the infectious agent has been demonstrated to be a living micro-organ- ism—a bacillus.

The bacillus of Glanders was discovered by the German bacteriologists Löffler and Shutz, in 1882, and the discov- ery has since been confirmed by several other competent bacteriologists. It is found in the nasal secretions and ulcers of the mucous membrane, in the "farcy-buds," pustules and enlarged lymphatic glands of infected ani- mals, and it is probable that it is also sometimes present in the urine.

It is a slender rod, somewhat similar in appearance to the well-known tubercle bacillus, but more uniform in size and somewhat broader. In preparations stained with fuchsin or with Löffler's solution of methylene blue, clear spaces are often seen in the rods, which have been thought by some authors to be spores, but this is doubtful as Löffler has found that no development occurs after the bacilli have been exposed to a temperature of 55° C. (131° F.) for ten minutes.

Pure cultures of this bacillus have been shown to pro- duce typical glanders in horses and asses, and it is recog- nized by bacteriologists as the cause of the disease. The disease may also be transmitted by inoculation to guinea- pigs and to field-mice, which animals (preferably guinea- pigs) may be used as a test of the infectious character of the nasal secretions of a suspected animal.

Exact experiments have shown that the bacillus of glanders is killed by exposure for five minutes to a five per cent. solution of carbolic acid, or by a 1 to 5,000 solution of corrosive sublimate.

In practice it will be best to rely upon boiling water for the disinfection of all articles which can be immersed in it without injury—rope halters, blankets, curry-combs, bits, etc. To keep on the safe side, half an hour may be fixed as the standard time during which articles to be disin- fected shall be immersed in boiling water, or exposed to steam at a temperature of 212° F.

Articles of leather should be repeatedly washed with a 5 per cent. solution of carbolic acid or a 1 to 1,000 solu- tion of corrosive sublimate ; or immersed in such a solu- tion for at least one hour. If the solution can be used hot, say 180° F., without injury to the material, this will be desirable.—*Journal of Am. Med. Association.*

USEFUL MEDICAL FORMULÆ.

Arranged by D. P. KENNA, L. K. Q. C. P. I.

Dinner Pill :

R.—Ext. aloes aquosi,
Gum mastich āā gr. xij.
Pulv. capsici,
Ext. belladonna āā gr. vj.
Pil. colocynth co. gr. xxx.
M.—F. massa, in pil. xij. div.
Sig.—One pill before dinner. (O'Farrell.)

Purgative Pill :

R.—Pulv. aloes soc. gr. ij.
Pulv. ipecac. gr. ʒ.
Pil. hydrarg. gr. j.
Ext. hyoscyami gr. ij.
M.—F. pil. j.
Sig.—One or two pills at bed-hour. (Aber- nethy.)

Cephalic Snuff for Coryza :

R.—Morphiæ muriat. gr. ij.
Bismuth. subnit. ʒ vj.
Pulv. acaciæ ʒ ij.
M.—F. pulv. (Ferriar.)

Mixture for Pyrosis :

R.—Bismuth carb. ʒ ij.
 Magnesii carb. levis ʒ j.
 Pulv. tragac. ver. gr. xx.
 Aq. flor. aurantii,
 Syr. flor. aurantii āā ʒ ij.
 Aquam ad. ʒ vj.

M.—F. mist.

Sig.—Three or four teaspoonfuls three times daily, after meals. (Squire.)

Habitual Constipation :

R.—Aloina,
 Ext. nucis vom.,
 Ferri sulph.,
 Pulv. ipecac.,
 Pulv. myrrha,
 Saponis āā gr. ½.

M.—F. pil.

Sig.—One pill to be taken half an hour before last meal of the day. (Sir A. Clark.)

Or,

R.—Ext. cascarræ S. Liq. ʒ ij.
 Tr. nucis vom. ʒ ij.
 Glycerini ʒ j.
 Aquam ad. ʒ iv.

M.—F. mist.

Sig.—ʒj. as required.

Carlsbad Salt (substitute for) :

R.—Sodii sulph. ʒ j.
 Sodii chloridi,
 Sodii bicarb. āā ʒ ss.

M.—F. Pulv.

Sig.—Take in half a tumblerful of tepid water.

ALBUMINURIA OF PREGNANCY AND PUERPERAL ECLAMPSIA.—Dr. Lantos, of Buda-Pesth, has recently made a series of observations on albuminuria of pregnancy in the wards of Professor von Kéz-mársky. In over 18 per cent. of 70 pregnant women he found albumen in the urine, whilst in nearly 60 per cent. of 600 newly delivered women the urine was albuminous. Albuminuria was detected in over 70 per cent. of 268 primiparæ, and over 50 per cent. of 332 multiparæ. The percentage was distinctly lower in premature labour, and 50 per cent. lower in abortion cases. Out of ten cases where albumen was abundant so that Dr. Lantos used the microscope, he found pus in 3 and casts in 5, but no foreign elements in the remainder. He examined the kidney in 39 cases where the patient had neither died from eclampsia nor from nephritis. In 15 of these cases the kidneys were very anæmic, in 21 pale, and only in 3 full of blood. Amongst the local changes in other cases he found acute parenchymatous nephritis in 2 cases, acute hæmorrhagic nephritis in 1 case, parenchymatous degeneration in 9 case, and in 4 albuminous degeneration.

Dr. Lantos therefore concludes that, putting aside all evident and probable cases of nephritis in pregnant women, albuminuria is not rare in pregnancy, and very common after parturition. He refers the phenomenon to reflex irritation of the vasomotor nerves of the renal vessels; it has no pathological significance, and, in conjunction with other symptoms, is a valuable diagnosis sign of pregnancy. Out of 14,815 labours observed in the course of fifteen years, he noted 53 cases (0.36 per cent.) of puerperal eclampsia, a ratio of 278 to 1. Over 78 per cent. out of 42 eclamptic cases occurred in primiparæ, over 21 per cent. in multiparæ; 15 out of the entire 53 died.

Dr. Lantos thinks that the rate of mortality is increased when instruments are used, and as the convulsions often do not cease after delivery, he thinks that the forceps should not be used unless there be strong indications. Convalescence is much prolonged after eclampsia. In 23 of the eclampsia cases the urine was examined; in 21 it was albuminous, casts being found in 4. At the necropsies of fatal cases of convulsion, Dr. Lantos found constant changes in the brain, but only once acute, though frequently chronic, renal changes. Like Osthoff, he traces puerperal eclampsia to violent reflex vasomotor disturbance, and classes it as acute peripheral epilepsy.—*Br. Med. Jour.*

IRRITABLE BLADDER AND FREQUENT MICTURITION IN FEMALES, Alexander Duke—This distressing complaint is commonly met with among female patients suffering from internal disease, and the diagnosis of the cause is sometimes by no means easy. In some cases where, after careful examination, we are able to exclude the urine itself as a source of irritation, and find that the uterine symptoms complained of would not be sufficient by reflex action to account for the continual annoyance, we are obliged to seek for some other cause, and I have remarked in a great number of these cases an unnatural appearance of the meatus urinarius, the opening being much smaller and rounder, reminding one somewhat of the pin-hole as seen in conjunction with conical cervix uteri. This I find is comparatively easily cured by forcible dilatation of the meatus or urethral canal, but I have noticed a rather curious phenomenon to occur during the process, that is, the escape of a considerable quantity of urine when the blades of dilator are freely opened (and this after the bladder had been but a few moments before fully emptied to all appearance by the catheter), the amount of urine escaping being fully equal in some cases to that previously removed. It has always been a puzzle to me where this urine came from, as the diagnosis of cystocele is a comparatively easy one, and a sacculated condition of the bladder could not possibly exist in all the cases in which I have noticed this peculiarity. We all know that when there is a

tendency to prolapse of the uterus, and the vaginal walls in a lax condition, cystocele is most likely to occur, the posterior wall of the bladder losing its necessary support, and so bulging backwards into vagina and forming a sac sufficient to hold a considerable quantity of urine, but it is in those cases where this factor has been carefully excluded by previous examination that I am at a loss to explain the cause of the peculiarity alluded to. Dilatation of the urethral canal I find the most useful treatment in all cases when the urine is normal, and spasm and irritability is complained of, but where there is a manifest want of tone in the bladder a mixture containing tr. ferri muriati, cantharides, and nux vomica has always given me satisfactory results. A blister over sacrum I seldom employ, but have found it useful in exceptional cases. The galvanic battery I use as a *dernier ressort*, and have had most satisfactory results in some apparently hopeless cases, one lady patient having worn a urinal for more than five years night and day previous to my seeing her.—*Med. Press.*

THE THERAPEUTIC USES OF HYPNOTISM—Herter adopts Lieboldt's classification of trance in six divisions, preferring it to the arrangement of Charcot. The proper method of producing hypnosis, advocated by Lieboldt and Bernheim, consists in first securing the confidence of the patient, and then telling him to look the operator steadily in the eye and to think of nothing but going to sleep. The process may be materially aided by suggestive remarks addressed to the patient, and by placing two fingers upon the face; the fingers being pressed gently upon the eyelids. Men and women are about equally susceptible to hypnosis. Although so much has been written on its use in hysteria, the indications for employing it are far from clear. It may be of service in some forms, but recovery, if secured, is not permanent. Hysterical paralyses, especially abductor paralysis of the larynx, hysterical amblyopia and amaurosis, and hysterical convulsions are often decidedly benefited. One need never be discouraged by the first trial to secure hypnosis in a case of hysteria. Not much is to be hoped from it in hystero-epilepsy. The improvement in chorea is often rapid and marked, especially when the movements are general; a number of daily sittings, continued for months, being usually required. In insanity the results are not satisfactory. In delirium tremens the effect is often excellent, and the method finds a hopeful field in the treatment of the alcohol habit. In masturbation it has been used with success; and in incontinence of urine in children it has, in the hands of Lieboldt, been employed with a large percentage of cures. Herter doubts whether it is of any real advantage in joint affections, though good can be expected in recent neuralgia, and he has succeeded in cutting short or mitigating the attacks in certain

instances of migraine. The occurrence and duration of menstruation have been influenced by it in a few cases. It is not to be recommended in surgery as a substitute for the ordinary anaesthetics, except in cases in which the latter are contra-indicated. In insomnia it can often be employed with good results, gradually substituting it for drugs. As regards the use of hypnotism in parturition, the author concludes that it induces sleep, and is in no way prejudicial to the uterine contractions; that it has no tendency to produce post-partum hæmorrhage or any other bad result; that it is in no way comparable to chloroform in labor, and should only be used in the rare cases in which the usual anaesthetics are contra-indicated.

The bad results following it, and which have been urged against it, can for the most part be entirely antagonized by suggestion. He proposes, as a general rule, that no one should be hypnotized without first obtaining his or her formal consent, and that the operation should always be done in the presence of a third person. No suggestions should ever be given, except those necessary for the patient's improvement in health.—*Boston Med. and Surg. Jour.*

THE MORTALITY OF PNEUMONIA.—Dr. William Osler (*Univ. Med. Mag.*) points out that hospital statistics do not warrant the assertion that there has been any marked increase in the mortality from pneumonia of late years, as asserted by some, although the census returns of the United States favor the latter statement. But, as Dr. Billings points out, the comparison with preceding years is inaccurate, since the data were very imperfect and unreliable. At the Pennsylvania Hospital, with a total of 704 cases since 1845, the mortality has been 29.1, a rate sometimes much exceeded, as in 1875 to 1877, when it was 36.2, and sometimes quite as much lessened, as in 1845-47, when it was only 16 per cent. In the Boston City Hospital for thirteen years the mortality was also 29.1 per cent. Dr. Osler shows that in private practice the rate is lower than in hospitals, and points out that the increase of pauper populations in large cities is doubtless responsible in some measure for this diversity. Dr. Hartshorne's statement, that the "mortality of pneumonia to-day is, under similar circumstances, more than twice as great as it was forty years ago," is not thus borne out; and Dr. Osler shows that in many cases pneumonia is absolutely uninfluenced by treatment. Yet those cases which do call for treatment are precisely those in which our methods are most futile. Post-mortem records show how seldom a simple pneumonia, apart from chronic disease of other organs, is a cause of death, but Dr. Osler thinks that it may be useful to divide the fatal cases into three groups: "1. Those in which the death has resulted from such complications as gangrene, men-

ingitis, and ulcerative endocarditis—conditions at present beyond our art to remedy. 2. Cases in which death has resulted from mechanical causes—over-distension and paralysis of the right heart. 3. The large group in which death has been due to failure of the general powers under the influence of the high fever, or of the specific poison, or of both combined." He has often asked himself why death occurred in some cases, and had been struck with the distended right heart and systemic veins in the young vigorous subjects that sometimes succumb. This seemed to indicate that the heart had failed in over-distension, and he was determined "not to let such cases die without a copious venesection." For ten years he has practised free bleeding (twenty to twenty-five ounces) in adults, and has seen but one case recover out of twelve or fifteen. The cases of bleeding in the late stage were uniformly fatal, as if the conditions present in pneumonia are something more than mechanical.—*Lancet*.

CURABILITY OF CIRRHOSIS OF THE LIVER.—Dr. Millard, at a late meeting of the Société Médicale des Hôpitaux, of Paris, presented three patients from his private practice, in whom, after a lengthy treatment for this affection, he had been able to effect a cure.

The first was a man, fifty-five years of age, who drank regularly from four to five bottles of wine daily. Suffering from dyspepsia for several years, he, in July, 1886, began to emaciate; the supervening ascites necessitated six tappings, from which over two hundred pints of fluid were removed. Since the month of November, 1886, the patient has been put upon an exclusive milk diet, with the administration of an infusion of juniper, and drastic purgatives twice a week. At the end of four months the improvement was already well-marked. The second patient, who partook of four pints of white wine daily, had been under the author's care for one year only. The treatment was the same as in the first case; improvement showing itself more rapidly; the patient continues in excellent health. The third patient underwent the same treatment, with greater and more marked improvement than in either of the foregoing cases.

At present the three patients seem apparently quite cured, the only remaining sign of their trouble being a slight hypertrophy of the liver.

The formula of the juniper infusion is as follows:

R.—Juniper berries, ʒ ijss.
Infused in water, ʒ vjss.

Then add

Acetate of potassium, }
Nitrate of potassium, } . āā grs. xxx.
Oxymel of squill, ʒ ijss-ʒ j.
Syrup of five roots, ʒ j.

The author further remarked, that he never hesitated to have recourse to tapping, whenever diuresis seemed insufficient. The only food allowed was milk; alcohol in all forms was strictly withheld. The infusion of juniper is not disagreeable to the taste. The author administered it whenever an increased urinary secretion was called for. The patients took it readily, one of them having taken it daily for eight months.—*Revue de Thérapeutique.—Med. News*.

MEDICAL TREATMENT OF FIBROID TUMORS OF THE UTERUS.—The continuous use of ergot internally in twenty or thirty drop doses, three times daily, will accomplish more in the end than the hypodermic method. With this may be alternated a pill composed as follows:—

R.—Ergotine, ʒ ij.
Strychninæ, gr. j.
Quinæ salicylat., ʒ iss.
Acidi arseniosi, gr. j.
M. ft. Massa et div. in pil. No. xxx.

One of these should be taken thrice daily in combination with a tablespoonful of the following:—

R.—Ext. fl. hydrastis Canad., ʒ ss.
Aque cinnam., ʒ v.
Ext. fl. phytolacæ decand., ʒ ss.
Sodæ bicarb., ʒ ij.
M.

These remedies in this particular combination are useful in retarding and diminishing the growth of fibroid tumors of the uterus.

The hydrastis and phytolacca both possess properties which give them power to retard abnormal uterine action and promote absorption. But I am persuaded that there are other therapeutic agents which, acting on the blood formation and through the circulation, influence the process of nutrition, rectifying that important function, when deranged, in a remarkable manner and in that way correcting those excesses of local action which produce local disease and abnormal growth. Some years since, with a view of carrying into practice this idea, I began a series of experiments for the purpose of testing the influence on the progress and development of fibrous tumors, by acting on the nutritive functions by means of those preparations containing phosphorus, lime and soda. I had at that time four cases of fibroid under my care. I selected to be used in these cases the syrup of the lacto-phosphate of lime and the syrup of the hypophosphites of lime and soda, as prepared by McArthur. That was about eight or nine years ago. Since that time I have had nine cases under my care. Six of these cases have remained under my inspection, and with one exception are so decidedly improved as to need no further treatment. The one exception came under

my care during the spring, and is now improving under treatment. Three of these cases alluded to have left my vicinity and migrated to a distance. In these cases the syrup of the lacto-phosphate of lime and the syrup of the hypophosphites were administered in teaspoonful doses each three times a day continuously for months, and with slight intervals, so as to give rest to the stomach, for years, that there might be maintained on the system a permanent influence.

The character of most of the cases subjected to this treatment was of the most aggravated form, and had previously been treated by means of ergot internally and hypodermically, the bromides, etc., without in any way retarding their progress.—*Gaillard's Med. Jour.*

OBSTETRICAL DON'TS.—1. Don't begin the administration of an anæsthetic early in labor; it predisposes to post-partum hæmorrhage.

2. Don't use an anæsthetic against the will of the patient or friends.

3. Don't object to the moderate use of an anæsthetic during the latter stage of labor, as it is almost wholly without danger.

4. Don't put the woman entirely under the influence of the anæsthetic, unless you intend some operation.

5. Don't immediately cut and tie the umbilical cord; the child may lose a good deal of blood by so doing.

6. Don't make a strenuous effort to take the placenta away at once, not until the uterus has begun to contract.

7. Don't make forcible traction on the umbilical cord.

8. Don't permit the placenta to remain more than an hour.

9. Don't withdraw the hand from the uterus in taking away the placenta until the walls have begun to contract.

10. Don't forget to examine the perineum after labor.

11. Don't neglect to keep the hand on the fundus uteri for several minutes after delivery, and press down.

12. Don't permit the woman to be left alone for the first hour at least. Danger of post-partum hæmorrhage.

13. Don't leave without giving instructions to apply the child to the breast an hour or two after labor.

14. Don't refuse to place a binder upon a woman; a bandage when properly applied is a benefit.

15. Don't let the nurse tend to the child until the mother has been cared for.

16. Don't permit the nurse to wash the baby until it has been smeared with oil of some kind.

17. Don't put undue pressure on the child's head to mold it into asymmetrical shape, when it has

been flattened somewhat from the labor, as it will return generally to nearly its natural shape.

18. Don't allow the nurse to press out the secretion of the breasts for a new-born infant.—*Med. Advance.*

THE NEW ANTIPYRETIC, "PYRODIN": A WARNING.—Under this name a new drug has been introduced, which has undoubted temperature-reducing properties of a high order, the practical application of which, however, is much interfered with by its toxic action. Pyrodin contains as its active agent acetyl-phenylhydrazin ($C_6H_5N_2H_1C_2H_3O$) a crystalline powder very sparingly soluble in water. According to the clinical and experimental observations of Dr. Dreschfeld, of Manchester, which have been confirmed by M. Lépine, of Lyons, pyrodin acts in the same manner as, but more powerfully than, antipyrin, antifebrin, and phenacetin; and it has also been used effectively in migraine and other forms of neuralgia, as in the lancinating pain occurring in locomotor ataxy (Lépine). Great caution, however, is required in its administration, as it is apt to produce jaundice, followed by anæmia and even more serious symptoms due to hæmoglobinæmia. Milder toxic symptoms have occasionally followed the administration of acetanilid or antifebrin, and also of phenacetin; but, as phenylhydrazin is a much more powerful poison than anilin, so also are the toxic properties of its acetyl compound much greater than those of acetanilid. In face of the poisonous qualities of pyrodin, we must warn the profession against the use of this drug generally. In exceptional cases, and where other antipyretics have failed, it may be useful, but great caution should be used. Small doses only should be given, and at sufficiently long intervals to enable one to watch any toxic effects, with the first appearances of which the drug should be stopped.—*Br. Med. Jour.*

ELECTRIC STIMULATION IN HYSTERIA.—M. Didier recently read a paper before the National Society of Medicine of Lyons on this subject. The following were his conclusions: 1. Electric stimulation is decidedly the best treatment for hysteria hitherto discovered. It checked the attacks in every case of convulsive hysteria in which it was employed, and in two cases of hystero-epilepsy, though in the latter affection its effects are less certain. It is superior to compression of the ovary, as this treatment may cause pelvic mischief, and cannot be safely employed in pregnancy. 2. Electric stimulation enables the practitioner immediately to distinguish an epileptic from a hysterical patient—whether the hysteria be epileptiform or of convulsive character—being useless in the former case and of infallible effect in the latter. 3. In patients suffering from two different neuroses, this method will serve to distinguish

hysterical from the epileptiform symptoms. 4. An electric current of moderate intensity is applied along the track of the aura; that is to say, the electrodes are applied to the epigastrium and to the front part of the neck, when the treatment is applied at the beginning of the attack. When it is resorted to only during the clonic or tonic period, one electrode is applied to the neck and the other is placed in one hand, or the electrodes are placed each in one hand. 5. Besides checking the hysterical attacks, electric stimulation has a curative effect on the neurosis.—*Brit. Med. Jour.*

IS THE TASTE IN THE MOUTH?—Is it not a little singular that physicians will persist in speaking of the taste in the mouth? A patient was asked the other day if she had a bitter taste in her mouth in the morning. She naively replied that when she had a bitter taste it was always in her mouth. That is the only end of the alimentary tract that we know of in which the sense of taste resides.—*Medical Age.*

If our contemporary will be so particular, we may perhaps venture to remind him that, if one comes down to a minute analysis, the taste is not in the mouth in reality at all, but is in the gray matter of the uncinatè gyrus. The idea that the taste is in the mouth is simply due to the eccentric projection of the secretion according to the known laws of physio-psychology. We trust that he will make proper explanations to the lady.—*Med. Rec.*

RESORCIN IN THE TREATMENT OF KELOID.—Dr. Justus Andeer, writing in *Der Fortschritt* of Oct. 10, 1888, reports the case of a woman who was incapacitated for work on account of a large keloid on the right foot. A one-per cent. ointment of resorcin was applied, and in a short time all the painful symptoms disappeared, and the patient expressed herself as cured. Von Nussbaum has also recommended resorcin as a very efficient remedy for keloid. As the disease is usually regarded as practically incurable, a trial of resorcin would seem to recommend itself as worthy of being made. It is advisable to begin with a weak ointment and gradually to increase the strength according to the indications.—*Med. Rec.*

REAGENT FOR TESTING FOR SUGAR IN THE URINE.—Prof. Almén, of Upsal, has proposed the following test which does not change, and which gives better results than Trommer's:

Caustic soda	8 parts.
Water	100 "
Tartrate of soda	4 "
Sublimate of Bismuth	2 "

Test the urine first for albumen by means of heat and nitric acid; filter; then employ one part of the above solution to ten parts of urine.

This will detect five per cent. of sugar.—*Jour. de Méd.*

TREATMENT OF RHEUMATISM.—Peabody treats his cases of acute rheumatism with the following combination of salicylic acid and iron:

R. Acid, Salicylic	20 grains.
Ferri Pyrophosphatis	4 grains.
Sodii Phosphatis	1 grain.
Aque	½ ounce.

M. Sig.: The dose, which is described in this formula, is given every two hours.—*Med. Brief.*

FOR DIABETES.—M. Constantine Paul recommends the following mixture for those who demand the sweet flavor and are prohibited sugar. A teaspoonful contains twenty-five centigrammes of saccharin, sufficient to sweeten a glass of water:

R.—Saccharin,	6 parts.
Sodii bicarb.,	4 "
Alcohol (40 per cent.)	100 "
Ol. menth.,	gtt. xx.—M.

—*Am. Jour. of Pharm.*

ETHER FOR PEDICULI PUBIS.—In the *Monat. prak. Derm.* it is proposed to destroy pediculi pubis by a single application of ether in spray. This procedure is less injurious to the skin than the application of chloroform, which likewise accomplishes the same object.

THE annual statement of the Mutual Life Insurance Company of New York shows the remarkable progress made by this institution during twelve months. The record made by the Mutual eclipses its own best efforts, and naturally exceeds that of any other financial institution in the world. The new business written amounted to \$103,214,261.31, an increase of \$33,756,792.95 over the new risks assumed in 1887, and a gain of \$46,381,542 over the business of 1886—showing a continuous and phenomenal advance. The assets of the Mutual Life now aggregate \$128,082,153.56, indicating a gain for the year of \$7,275,301. The Company has now an outstanding insurance account amounting to \$485,125,184. Its total income from all sources is reported at \$26,215,932. It paid to its members during the year for death claims and endowments and other obligations \$14,727,550.22. Up to date the Mutual had 158,369 policies in force, showing a gain in membership for the year of 17,426, thus forming the biggest army of policy-holders in any regular Life Insurance Company in the world. The surplus fund was increased \$1,645,622.11 in 1888, and the Mutual now has \$7,940,063.33 over and above every liability.

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.

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

TORONTO, APRIL, 1889.

The LANCET has the largest circulation of any Medical Journal in Canada.

THE ANATOMY ACT.

All the Medical Colleges in Ontario, aided by the sympathy of the whole medical profession of the Province, were much interested in the passing of the recent amendments to the Anatomy Act. The Medical Council and our Medical Colleges, are very properly, most anxious, while extending from time to time the curriculum of medical studies, to give students every reasonable facility to bring themselves up to the high standard now required. Hence the necessity which exists for increasing the supply of anatomical material obtainable by law, without forcing students to get, *as best they can*, what they absolutely require, in order to pursue their studies to any advantage. The amendments sought for, embraced the unclaimed bodies of persons having no relatives, who have died in our insane asylums, hospitals, houses of industry and other refuges aided by public grants. To have granted this fully, and with readiness, would have been the very least our Ontario Legislature should have done in aid of a profession like ours, the members of which, have necessarily committed to them, the care at one time or another, of every man, woman and child of the population. But the experience of past efforts in the same direction was repeated this year. Some of the members of the Legislative Assembly, without distinction of party, did as they always have done,—set themselves steadfastly against meeting the reasonable

demands of the profession and the Medical Colleges, and left nothing undone which they could do, to make the amendments obtained as meagre and unsatisfactory as was in their power. For example, under the absurd idea that the minds of persons, who have been in many cases hopelessly insane and as mindless as oysters for a long term of years, might be affected unfavorably by the idea of their bodies being used for the advancement of science before being buried,—was made a reason for excluding asylums for the insane from the institutions included in the amendments sought for.

How such persons can ever be supposed to bother their heads about what is to befall their bodies after death, whether they are to rot in the grave as usual, or be first made tributary to science, has never been satisfactorily explained, and cannot be. It is true that some of the medical superintendents of asylums themselves have a fad of this kind, and bring it forward periodically, as often as the Medical Colleges ask for what they are justly entitled to in this direction; a fad, however, to which no attention should be paid.

It was also desired to have the bodies of those who had died in public institutions claimable only by *relations*; for heretofore, the permission given to "*bona fide* friends" to claim them, has been sadly abused—50 or 60 per cent. of these bodies being sometimes claimed by friends of a bogus kind, *e. g.*, by fellow-members of societies to which the deceased might have belonged, and often only by fellow-countrymen; or by any one indeed, even a hospital nurse, who could collect in small sums the necessary \$5 from any source.

On this account the words "*bona fide* friends" were left out by the framers of the amendments. This provoked vigorous opposition. All sorts of imaginary cases were spoken of by garrulous legislators as likely to occur, and finally they were re-inserted, and a provision added by way of guarding against "bogus" claimants, *viz.*, that the order of a police magistrate, who is to be satisfied that the party claiming the body is a "*bona fide* friend," will have to be procured, in addition to paying the \$5. This, of course, will, to some extent, decrease the evil which formerly existed and enlarge the supply available for Medical Colleges; but to have given the promoters of the amendments what they asked for, would have done no harm, as

no "bona fide friend" has ever been or would ever have been refused, by any College, the body he might claim, and on this very account the Colleges have to keep them a long time intact in order to give every opportunity for just claims to be made. It is to be hoped the police magistrates, in doing the duty the Bill assigns them, will show more intelligence than many members of the Legislature did. If so, the interests of Medical Science may, even with the scant concession given, gain considerably.

The members of the profession can hardly imagine the gross ignorance, and intense prejudices of some of the parties who have the honor of writing M.P.P. after their names. Imagine one of these gentlemen gravely suggesting that he did not see why medical students might not study anatomy from "manikins"—*ex pede Herculem*.

Another anomaly in connection with this Bill was the authorities of a *hospital*, in a town some distance from Toronto, petitioning and protesting loudly against its passing. What sort of medical attendants would that, or any other hospital, be able to secure, if the study of anatomy were hampered and largely prevented by such petitioners? The opposition to such Bills is based on two grounds: most unjustifiable ignorance, and strong prejudice. We hope that the Bill may give such help as the Colleges and the profession require in the study of anatomy; but if its provisions be found so inadequate that other plans, which no one approves of, have to be resorted to, to eke out the supply of what *must be had if we are to have properly educated physicians and surgeons*, and which the Legislature cheerfully and fully has provided for, in Great Britain and even in Quebec, it is neither the Colleges nor the profession, but our insufficiently enlightened Legislature which will have to bear the blame.

OVER-WORKING OF SCHOOL CHILDREN.

In the course of a chat a few evenings ago with a gentleman engaged in the educational work of this Province, he remarked: "I worked seven hours yesterday preparing a lecture, but I find it was too much; a man should not work more than three or four hours at anything which taxes the brain to its utmost." I wondered at the time how many children of tender years pass under his observation during a twelvemonth of his professional duties, who can get off with, say, three

or four hours a day of mental work, under our present system of educational forcing. We know from a somewhat extended experience as to the methods of teaching in vogue in some of our most successful schools, that the pupils attending them are sadly over-worked. Five hours a day are spent in the school rooms proper and then comes the ever-dreaded "home-work." A lady consulted us the other day regarding the health of her daughter, a girl of about fourteen years of age. The symptoms need not be here set down, as they are of a kind with which every medical man is more or less familiar, but, instead, let me set down simply the work of that girl for twenty-four hours. She rises at 6:30, practises at the piano for an hour, has breakfast and gets to school at nine. Here for five hours she is actively engaged in class-work, and I know from the *esprit de corps* of that school, that there is little opportunity for the unbending of the bow during these five hours. In the evening it is usually ten o'clock before her "home work" is done. Is it at all to be wondered at that she is languid and restless, always tired, has no appetite, etc.? This is not an unusual case. Of course many children are so constituted that they let home work go and take their chances next day, and do not wear themselves out even during school hours by a too close attention to the work of the classes; but the more conscientious and fine-grained a boy or girl is the more will their burdens be increased. And it is generally true that the extremely sensitive child, who dreads a bad mark for an imperfect recitation, or a frown from the teacher for inattention, is usually the one whose physical strength will least enable him to bear up under this constant mental strain.

Now, the teacher cannot be blamed for endeavoring to force his pupils, when that incubus, the examination is constantly kept before him. Let his class fail to come up to the standard of *deadly uniformity* required by our examining boards, and he is graded as inefficient. These examining boards, acting of course under the regulations of the Education Department, are the bane of the intelligent teacher's life. They have been well described by a caustic writer as: "Knots of clever, eager, trained experts in the examining art, who are marking, questioning, classing and certifying right and left on a technical, narrow, mechanical method. They would be far better employed in

learning something useful themselves." Under the present system of examinations everything is reduced to a routine, no individuality in teaching can obtain, nor can the fitness of a pupil for one thing more than another be recognized, to an extent at all commensurate with the difference in the nature of children, let alone having regard to their probable walk in life. A gentleman cannot be made by Act of Parliament, nor can a scholar, in the true sense of the term, be developed by any such routine course of teaching as is now required to make pupils "pass" the examinations which are eternally looming up before them, and the results of which, as before stated, are looked upon as determining the teacher's status in his profession, all the facts and all the Gradgrinds in creation notwithstanding.

ONTARIO MEDICAL ASSOCIATION.

As will be seen by the advertisement in another column, Wednesday and Thursday, the 5th and 6th of June, have been fixed upon as the dates of the ninth annual meeting of this Society. This meeting promises to be one of more than ordinary interest. Already many valuable papers have been promised, and the special committees have been hard at work for several months.

Dr. Roswell Parke, of Buffalo, will read a paper upon "The radical cure of hernia." Interesting papers are expected from Dr. Skene, of Brooklyn, and Dr. Andrew Roberston, of New York. Among others who have signified their intention of being present and reading papers, are Dr. Howitt, of Guelph, Drs. Buller and Ross, of Montreal; Drs. McFarlane, Graham and Ryerson, of Toronto, and Dr. James Grant, of Ottawa.

The special committees are composed as follows:

Medicine.—Dr. Sheard, Toronto, Chairman. Dr. McPhedran, Toronto; Dr. Moorhouse, London; Dr. Tye, Chatham, and Dr. Bruce Smith, Seaforth. The subject selected for discussion is "The prognostic significance of moderate cardiac hypertrophy."

Surgery.—Dr. W. T. Aikins, Toronto, Chairman. Dr. J. H. Cameron, Toronto; Dr. Malloch, Hamilton; Dr. Ruttan, Napanee, and Dr. Dupuis, Kingston. Subject: "The general management of the patient and sick room in surgical cases."

Obstetrics and Gynaecology.—Dr. Griffin, Hamilton, Chairman. Dr. Barrick, Toronto; Dr. Fenwick, Kingston; Dr. Adam Wright, Toronto, and Dr. Howitt, Guelph. Subject: "Some observations on lacerations of the perineum."

Ophthalmology.—Dr. Moore, Brockville, Chairman.

Drs. Reeve, Burnham, Palmer and Ryerson, Toronto, and Dr. Connell, Kingston. Subject: "Glaucoma."

Therapeutics.—Dr. Thorburn, Toronto, Chairman. Dr. Oliver, Kingston; Dr. J. L. Davison, Toronto; Dr. Meek, London, and Dr. Wishart, Toronto.

The officers of the Association for 1889 are as follows:—

President.—Dr. W. H. Henderson, Kingston.

Vice-Presidents.—Dr. Geikie, Toronto; Dr. Howitt, Guelph; Dr. Day, Trenton, and Dr. Aikman, Collingwood.

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The committees other than the above will be composed as follows:—

Committee on Papers and Business.—Dr. Graham, Toronto, Chairman. Dr. Mullin, Hamilton; Dr. Powell, Toronto; Dr. Groves, Fergus, and Dr. A. A. Macdonald, Toronto.

Committee on Credentials.—Dr. A. Davidson, Toronto, Chairman. Drs. R. A. Pyne, W. H. B. Aikins, Armstrong, Britton, Duncan, Barrick, Elliott and Carveth, Toronto, and Dr. Arnot, London.

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Committee on Publication.—Dr. Anderson, Milgrove, Chairman. Dr. Caldwell, Lakefield; Dr. McAlpine, Lindsay; Dr. McLay, Algoma; Dr. Philp, Hamilton; Dr. Winskill, Brantford; Drs. Peters, J. L. Davison and Ferguson, Toronto; Dr. Stalker, Ridgetown, and Dr. Powell, Toronto.

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Committee to form a Code of Ethics.—This committee is the same as above, with the addition of Drs. Burnham and Wishart, Toronto.

Committee on Coroners' Inquests.—Dr. J. H. Richardson, Toronto, Chairman. Dr. Irwin, Kingston; Dr. Johnson, Toronto; Dr. Philp, Hamilton; Drs. C. W. Covernton, J. E. White, Duncan, J. H. Cameron and Powell, Toronto.

Committee on Audit.—Dr. Kitchen, St. George, Chairman. Dr. Gullen, Toronto; Dr. Hillary, Aurora; Dr. Lundy, Preston; Dr. Millar, Toronto; Dr. McKinnon, Guelph; Dr. A. J. Johnson, Toronto; Dr. Sinclair, St. Marys; Dr. Yeomans, Mount Forest; Dr. Machell, Owen Sound; Dr. Phillip, Brantford; Dr. McDonagh, Toronto; Dr. Macallum, London, and Dr. Millman, Kingston.

Committee on Necrology.—Dr. W. H. B. Aikins, Chairman. Dr. J. A. Watson, Toronto; Dr. Whiteman, Shakespeare; Dr. Logie, London; Dr. Taylor, Goderich; Dr. Smith, Toronto; Dr. Walker, Dundas; Dr. Grant, Beaverton; Dr. Roe, Georgetown; Dr. J. Caven, Toronto; Dr. Lindsay, Strathroy; Dr. Hunt, Clarksburg, and Dr. Eakins, Belleville.

Committee on Arrangements.—Dr. P. H. Bryce, Toronto, Chairman. Drs. Grasett, Temple, Spencer, Simpson, R. A. Pyne, O'Reilly, Acheson, Macfarlane, Machell, Ferguson, Davidson, Burritt, Grafton, Thistle and Cunningham, Toronto.

THE BELLY BAND FOR THE NEW BORN.

The abdominal pad, as used in obstetrics, having received the condemnation of the great majority of the profession, as being not only useless to prevent post partum hemorrhage, but absolutely harmful; and the obstetric binder being looked upon as valueless except as a comfortable support to the mother's relaxed abdominal walls; we are quite prepared for innovations in the management of the new born child. Hitherto the old women's notions regarding this latter have been allowed to go almost unchallenged, but the iconoclastic spirit of modern scientific obstetrics is becoming evident even here, and this last entrenchment of mediæval obstetrical science is being forced. No doubt the poor helpless babe is tortured beyond what we can conceive, by a system of treatment which in a great many cases is as irrational as it is harmful, yet

little has been said or done to remedy the evils of which we speak. In this connection, the following by Dr. Ady, in the *Pacific Med. and Surg. Jour.* will be of interest:—He says "he believes the 'belly-band,' however made, is a relic of barbarism—uncomfortable and mischievous, often causing and never preventing hernia. The inguinal region is the weakest part of the abdomen. Instead of protecting this, the band, on the contrary, forces the intestines down into it. Even if the umbilical opening has not properly closed, the pressure of the band about the circumference of the body will only crowd a knuckle of intestines into the aperture and effectually keep it open, instead of allowing it to close, which it will generally do if left to itself. He would, therefore, advise that all bands, skirts, etc., that punish the baby, be left off."

NOTES AND OBSERVATIONS

FROM NEW YORK HOSPITALS AND SOCIETIES.

Prof. Loomis, in a recent clinic on cardiac diseases, offered the following suggestions as a result of his long and extensive experience:—In the prognosis of cardiac diseases, too much stress has been laid on the existence or non-existence of a cardiac murmur and the character of it. The general tendency is to give an unfavorable prognosis whenever a murmur is found. As a matter of fact the murmur is of little importance, it is the condition of the cardiac walls that influences the prognosis. If, accompanying the murmur, there is compensatory hypertrophy, the prognosis is good; if there is no hypertrophy or dilatation, the prognosis is good; but if there exists dilatation and degeneration of the cardiac wall, and symptoms of impeded circulation, then we have just reason to render an unfavorable prognosis; and the one fact to be considered in all forms of chronic endocarditis is the condition of the cardiac walls. He has seen many a patient over 70 years of age with well-marked cardiac murmurs, but who complained of no symptoms referable to the heart whatever. In presenting a case of ulcerative endocarditis, he concisely stated the present views of the etiology as follows: Until quite recently most observers and experimenters held the view that there was a specific bacteria which, when intro-

duced into the system, would give rise to ulcerative endocarditis, just in the same way that the tubercle bacillus would cause phthisis. The experiments of Prudden, of New York, have conclusively shown that in order to produce ulcerative endocarditis the valves must have been the seat of some traumatism, as a previous endocarditis or direct mechanical injury. In the majority of animals in which the bacteria were introduced, the results were *nil*, but when the valves were pricked with a needle or had been the seat of a previous simple endocarditis, ulcerative endocarditis was invariably produced. It has been proved that there is no specific bacteria for ulcerative endocarditis, but any member of the septic class will cause it. He also stated that he believed that we were on the eve of a radical change in the modern views of bacteriology, as recently a bacillus had been discovered which would give rise to phthisis just as surely as Koch's tubercle bacillus, and which was in every particular entirely distinct from it.

For the relief of distressing vomiting, which occurs in all forms of gastritis, Prof. Janeway highly recommends 5 minims of a 4% solution of cocaine, given in half a glass of cold water every four hours. In this manner the whole surface of the gastric mucous membrane is rendered anæsthetic, and its effects are sometimes magical.

For the relief of all forms of sudden and intense dyspnoea, Prof. Smith states that no plan in his hands has yielded such satisfactory results as the hypodermic use of atropia and morphia. He gives immediately $\frac{1}{10}$ gr. atropia and $\frac{1}{4}$ gr. morphia, and if this does not relieve it, he repeats the dose very shortly. In many cases the result is almost magical, and the patient, who was obliged to sit up and gasp for air, is enabled to lie down quietly and go to sleep.

The regular winter session of clinics and lectures of the Bellevue and University Medical Colleges has closed, the examinations are over, and each College graduated in the neighbourhood of 160 M.D.'s.

ACCIDENTAL RASHES IN TYPHOID FEVER.—In a paper on this subject read before the Section of Medicine of the Royal Academy of Medicine in

Ireland, Dr. John William Moore sums up (*Dub. Jour. of Med. Science*) his conclusions as follows:—1. Not infrequently, in the course of typhoid fever, an adventitious eruption occurs, either military, urticarious, or erythematous. 2. When this happens, a wrong diagnosis of typhus, measles, or scarlatina respectively may be made, if account is not taken of the other objective and subjective symptoms of these diseases. 3. The erythematous rash is the most puzzling of all; but the prodromata of scarlet fever are absent, nor is the typical course of that disease observed. 4. This erythema scarlatiniforme is most likely to show itself at the end of the first, or in the third, week of typhoid fever. 5. In the former case, it probably depends on a reactive inhibition of the vaso-motor system of nerves; in the latter, on septicæmia, or secondary blood-poisoning; or both these causes may be present together. 6. The cases in which this rash appears are often severe; but its development is important rather from a diagnostic, than from a prognostic point of view. 7. Hence, no special line of treatment is required, beyond that already employed, for the safe conduct of the patient through the fever.

HISTORY OF THE MEDICAL PROFESSION.—The descendants of the early doctors of Upper Canada will be interested to learn that there is being prepared an historical account of those pioneer practitioners, by Dr. Canniff, the author of "The Settlement of Upper Canada." The work will give an account of the several steps in legislation to secure a proper standing of the profession, from the establishment of the Province of Upper Canada up to about the year 1850; 2nd, an account of the proceedings of the Upper Canada Medical Board; 3rd, a list of the medical men during that period, with biographical sketches. The Doctor urgently requests that the descendants of these worthies will kindly furnish him at once with information on the following points:—1, birthplace and date; 2, place of medical study and the degrees; 3, time of arrival in Canada; 4, places where he practised; 5, incidents in his professional life; 6, marriage, children and death.

TREATMENT OF ATROPHIC GASTRIC CATARRH BY PANCREATIN.—The following from *Deutsche Med. Woch.* will be of interest to our readers:—In atro-

phy of the gastric glands or in the so-called atrophic catarrh of the stomach, the results obtained from therapeutic measures have thus far not been positive; it being impossible to restore the already degenerated glands. Being convinced that neither hydrochloric acid nor pepsin, or any other remedies were of any use in the treatment of this affection, Dr. Reichmann, of Warsaw, tried in ten cases (out of one hundred and seven cases treated for various gastric affections) an alcoholic extract of the pancreas (twelve to fifteen per cent.) and pancreatin, and was soon convinced that the formerly sluggish chyme digestion was now properly performed, the general condition of the patients being greatly improved.

THE USE OF ANTIPYRINE DURING LABOR.—

The *Brit. Med. and Surg. Jour.* has the following:—Grandin (New York), has experimented with antipyrine as an analgesic in the first stage of labor, with gratifying results. His method has been to give fifteen grains of the drug, well diluted, and preferably with some stimulant, such as spiritus ammonii aromaticus, and to repeat the dose in one hour. Two hours later the patient is given ten grains, and this dose is repeated every two hours if necessary. In conjunction with antipyrine, Grandin uses chloral hydrate in fifteen-grain doses every three-quarters of an hour, until three or four doses have been given. The result of this combination Grandin has found to so far nullify the pains as to be scarcely perceptible in two instances, and in other cases to be simply uncomfortable. The progress of labor was not interfered with, and there was no evidence of injurious effect on either mother or child.

DIETETIC NOTES.—We would call the attention of our readers to the advertisement of the Lambert Pharmaceutical Co., of St. Louis, to be found on page 5. This Company has had prepared *Dietetic Notes*, suggesting the articles of food to be allowed and prohibited in several diseases in which their Lithiated Hydrangea has proven of special service. A neatly bound book of these dietetic notes, each note perforated for the convenience of physicians in detaching and distributing to their patients, will be sent free of cost; together with an illustrated treatise upon Catarrh and other monographs of more than ordinary interest, bearing upon the value of Listerine in the internal and external antiseptic treatment of disease.

THE form of the "Record of Autopsy," now in use at the Toronto General Hospital, is, we think, a very good one. An important step in the direction of securing useful and reliable statistics regarding the causes of death in all official post mortems, would be the issuing of said form, or at least some form, to the coroners in each county. It is well known that certificates to counsel, as to cause of death, etc., are often of so unscientific a nature, as to make the profession a laughing-stock in the courts. Dr. O'Reilly has compiled the form used, from a number of others, retaining what he thought was important and rejecting irrelevant matter, found in a number of similar blank forms he has examined. He has also added a table of the normal weight of the various important organs of the body, as no one can be expected to keep such figures always fresh in the memory.

LITHIUM AND ARSENIC IN DIABETES.—The treatment of diabetes mellitus by arsenic and lithium is, perhaps, the one which offers the best chance of success. We have already given, March, '88, Vigier's formula for their administration. We now take the following from the *Rev. de Therap.*:

Dr. Constantine Paul proposes the following:

Effervescing carbonate of lithium one dose, adding a few drops of Fowler's solution.

Dr. Dujardin-Beaumetz prescribes as follows:

To a glass of carbonic water add $7\frac{1}{2}$ grains of the carbonate of lithium and two minims of Fowler's solution.

TEST FOR PUS IN THE URINE.—The *Pharm. Era* gives the following directions for the detection of pus in the urine:—Drop into the specimen of urine enough tincture of guaiac to give it a milky appearance, and heat it to 100° F. If pus be present, a blue tint will develop. The urine may also be passed through a white filter, and a few minims of the tincture of guaiac then allowed to drop on it; if pus be present, a distinct blue coloration will be produced.

BINIODIDE OF MANGANESE IN AMENORRHEA.—

This preparation of manganese is now frequently employed in place of the permanganate. In our practice it seems to be better borne by the stomach, and probably acts quite as efficiently. It matters not which preparation is used, the drug must be

continued for a long time to get satisfactory results in amenorrhœa. The biniodide should be given in doses of 2 grains, pill form, three times a day.

THE POTATO-CURE FOR SWALLOWED FOREIGN BODIES.—Dr. Salzer, at a meeting of the Medical Society of Vienna (*Berliner klin. Wochen.*), stated that he had treated a six year old boy who had swallowed a small weight, a woman, who had swallowed a set of teeth, and a nine year old girl, who had swallowed a nail, by the method advocated by Dr. Cameron, of Glasgow, which consisted in feeding the patients for several days on nothing but potatoes. This treatment, which in all three cases was followed by success, is a method in vogue among the pick-pockets of London, who, swallowing their booty, live on potatoes until the stolen articles appear *per vias naturales*.

DROPSY OF PREGNANCY.—Dr. Griffith, in an article on the above subject (*Br. Med. Jour.*), gives the following directions for treatment:—"Treat the patient as a case of acute nephritis with dropsy; if there is no distinct improvement within a reasonable period (from two to four weeks), and with less delay if the dropsy increases; empty the uterus. The best method for doing this is by the introduction of a clean bougie, leaving it in until labor is established; a couple of five-grain doses of quinine being given at the end of twenty-four hours, if the uterus needs further stimulation."

NITRO-GLYCERINE IN BRIGHT'S DISEASE.—This remedy seems to have a beneficial effect in the above disease. Prof. Muhasseme, says *L'Union Médical*, has been trying the effects of nitro-glycerine in nephritic cases, and, from a number of observations, concludes that nitro-glycerine diminishes the amount of albumen passed in the twenty-four hours; the amount of urine passed is increased in the twenty-four hours, and this increase is maintained for some time after the cessation of the drug.

DRAINAGE TUBES IN ABDOMINAL SURGERY.—"The rule about drainage tubes," says Goodell, "is that they should be left in the wound as long as there is the slightest trace of blood in the discharge. When it becomes serous, they should be removed, as they are liable to cause irritation, and

delay convalescence. A point worth remembering is, to turn the drainage tube round every day. This prevents adventitious growths from extending through the holes, and thus making the tube difficult of extraction."

PERIPHERAL PARALYSIS.—J. L. Steven, M.D., reported, in the *Glasgow Med. Jour.*, three cases of peripheral paralysis, whose etiology was unknown, one being paralysis of the arm and the other two of the dorsum of the foot, causing the toes to drop. He treated them successfully by massage, with camphorated oil and ʒj. doses of Easton's syrup three times a day.

GASTRALGIA.—The following is recommended (*Med. Summary*):—

R.—Tinct. stramonii, ʒ ss.
Tinct. hydrastis, ʒ iv.
Aque, lauro-cerasi, ʒ iiss.—M.

SIG.—ʒ j in water, every four hours.

QUININE AND TANNIC ACID.—It is said that one and a half grains of tannin will neutralize the bitterness, without changing the action, of 10 grains of quinine. The intense bitterness of the drug renders it almost impossible to administer it to children in its natural state.

NITRO GLYCERINE HYPODERMICALLY IN HEART-FAILURE.—Dr. Firnell of Philadelphia reports three cases, says the *New England Med. Monthly*, in which two drops of a two per cent. solution of glonoin were injected hypodermically. He says: "One who has seen cases of heart failure treated in the usual way can have no conception of the brilliant results which may be obtained from this agent."

TREATMENT OF ACNE.—Isaak, of Berlin, gives the following formula, *Gaz. des Hôp.*, for acne:

R Resorcin 2½ to 5 parts;
Zinc oxide, } aa 5 "
Starch, }
Vaseline 10 " M.

The same to be used as constantly as the occupation of the patient will admit. It is said to have a very rapid effect.

COCAINE POISONING.—The first fatal result from the use of this drug in England, is reported as having recently occurred at University College

Hospital. A solution of 20 grains to the ounce, prepared for washing out the bladder was inadvertently administered internally. The patient died in about an hour.

THE LATE DR. ROBERT P. HOWARD.—We regret to notice, just as we are going to press, the death of Dr. Robert P. Howard, Dean of the Medical Faculty of McGill University, Montreal. We desire to express our deepest sympathy with his sorrowing friends.

DRAKE'S PHARMACEUTICAL JOKE.—It is said that Drake, when the ships of the Armada turned their tails, sent to Elizabeth the word "Cantharides"—that is, "The Spanish fly."—*Ex.*

ERROR.—We wish to call attention to an error, occurring at p 222, March issue of CANADA LANCET. In the prescription for chorea, the second line should read gr. j, not gr. iv.

DEATH OF JOHN C. DALTON, M.D., LL.D.

This eminent man died on Tuesday, 16th Feb., at the age of sixty-four. He had been suffering for some months from renal trouble. Born at Chelmsford, Mass., he was educated at Harvard, where he graduated in medicine in 1847. He held at different periods of his life the professorship of physiology in the University of Buffalo, the University of Vermont, and in the Long Island College Hospital. He served as Surgeon during a great portion of the late civil war. At the time of his death he was President of the College of Physicians and Surgeons of New York. Dr. Dalton was not a practising physician, but was ever to the front in the discussion of scientific medicine, and in touch with the views of the active members of the profession. His fame rests upon his skill as a teacher of physiology, in which he is said to have been almost unrivalled. He has contributed many monographs to medical literature, but his best known work is his text-book on human physiology, which has made his name a household word among physicians the world over. He was a warm friend and will be mourned by many to whom he had endeared himself by his manifold good qualities of heart and brain.

Books and Pamphlets.

THE MEDICAL ANNUAL, 1889. A complete work of reference for Medical Practitioners. Bristol, England: John Wright & Co. Sole agents for Canada, J. A. Carveth & Co., Toronto. Price \$2.50.

This small work, prepared in dictionary form, will prove of great service to practitioners as a book of ready reference. In it the practitioner can find the newest views, especially as to treatment, in almost every disease, and briefly tabulated reliable results of the use of more modern therapeutic agents. It is excellent in its numerous suggestions and valuable as a reference handbook.

THE OPERATIONS OF SURGERY. A Systematic Handbook for Practitioners, Students and Hospital Surgeons. By W. H. A. Jacobson, F.R.C.S., Assistant-Surgeon Guy's Hospital, etc.; with 199 illustrations. Philadelphia: P. Blakiston Son & Co. Toronto: J. A. Carveth & Co. Price \$5.

This is a very able treatise on operative surgery, and the illustrations are excellent. Of especial interest are the chapters devoted to injuries of head, to cerebral localization and operations in connection with injury to the head. The methods ordinarily resorted to in ligature of vessels, are taken up with much minuteness and care; indeed, all operations performable, are ably dealt with, as they pertain to particular regions. And as a work to which the practitioner can refer quickly for the details of an operation, it excels anything yet to hand.

EXPLORATION OF THE CHEST IN HEALTH AND DISEASE, by Stephen Smith Burt, M.D., Professor of Clinical Medicine and Physical Diagnosis in the New York Post Graduate Medical School and Hospital, etc., etc., pp. 206, cloth. New York: D. Appleton & Co. Toronto: Carveth & Co., 1889.

This is a well written book, concise and yet comprehensive. It embodies the methods pursued by Dr. Burt in his classes, and will be of great use to the student, as well as to the practitioner who has become rusty in the exact methods of conducting physical examinations. His explanations are clear. One extremely good feature of the book is the definiteness with which he locates the viscera and gives their normal relations to the parietes, as also the physical signs which can be developed in the normal chest.