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The Canada Medical Record.

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PHARMACEUTICAL DEPARTMENT.

Original Communications.

Animal Vaccination. By W. E. BESSEY, M.D. (Read before the Medico-Chirurgical Society, Montreal, Dec. 27, 1878.)

MR. PRESIDENT AND GENTLEMEN,—The vast importance of the subject of *vaccination* as a prophylactic measure against the contagion of small-pox must be my apology for troubling you with a paper upon such an old and familiar, yet far from threadbare subject. A full discussion of the subject of *animal vaccination* would involve a consideration or retrospect of the whole history of vaccination. This I shall not attempt to do. Neither have I set myself the task of producing a mere technical paper on the vaccination of animals; but I intend to lay before you some considerations in favor of *animal vaccination* in contrast with *humanized vaccination*, or, in other words, to advocate the performance of all vaccinations with *virus* obtained by direct transmission from heifer to heifer, for reasons that are sufficiently weighty to deserve the cordial consideration of the profession. We are, in this city, brought face to face with an influential and wily antagonist to the practice of vaccination, as a prophylactic against small-pox, and I am sorry to be obliged to say, that in my humble opinion the profession are much to blame, by the indifferent manner in which much of this work has been done in the past, for the accidents and arguments which have been placed at the disposal of those opposed to the practice.

These accidents I may enumerate as follows: First, the frequent occurrence of erysipelas as the immediate sequel of the operation, sometimes ending in death. The frequency with which skin eruptions of a doubtful character have succeeded the use of human-

ized virus. The frequency with which small-pox has followed vaccination by long humanized virus, indeed to such an extent as to have caused certain portions of the community to regard it as no preventive whatever. The popular belief is latent constitutional diseases or tendencies, such as scrofula, &c., have been aroused into action, and enfeebled health has too often resulted, from careless vaccination although I think this danger has been much overrated. The *positive* proofs however of the transmission of syphilis by this means, are among some of the considerations which require that we should pause and consider what have been the defects in the practice which could have occasioned such untoward events; and, whether, the principle of the antagonism of a specific contagion against subsequent incursions of a like contagion in the animal organism for the rest of life, supposed to have been well established in pathological science, should be reconsidered.

The medical philosopher, Jenner, in contemplating the fact that the modifications which the system undergoes in the reception of measles, scarlatina, and other contagious fevers, is protective of the individual against these several specific contagions for the rest of life; in conjunction with the well-known immunity from the contagion of small-pox conferred by the spontaneous vaccination upon the hands of the servants engaged in milking animals affected with the cow-pox,—led him to perceive in cow-pox, *small-pox* in its mildest possible form, or in other words that pox was pox, one and the same, no matter upon what animal it might make its appearance, and only modified in character and severity by the animal through which it happened to be transmitted.

This, gentlemen, I need hardly add, is the patho-

logical creed to which I hold. A century has almost passed away since Jenner in 1798 first published his discovery, and the medical profession is seen engaged in considering the imperfections of our present means of defence against small-pox. It is seen that the general principle already announced, that "the invasion of a contagious disease is protection against subsequent attacks of the same disease," is quite correct, yet that from some imperfection in the application of the prophylactic, or from some peculiar idiosyncrasies of the system in individuals, secondary attacks of small-pox do occur, and attacks of small-pox subsequent to vaccination are very uncomfortably frequent. This latter has led to the supposition that *vaccination* gradually loses its protective influence over the system, hence as a remedy, re-vaccination has been wisely recommended. Instead, however, of going back to the position of admitting the imperfection of the principle upon which the practice is based, namely, the fact that "it has been found impossible to infect with small-pox virus persons who have spontaneously contracted the vaccinia disease upon their hands in milking, or who have been artificially impregnated with the vaccine virus of the cow or horse;" the question has occurred to my mind whether, as "a thing half done is never done," and that "whatever is worth doing at all is worth doing well," it would not be better to use every means to render our practice of vaccination *perfect*, and in this way confer a degree of protection commensurate with the exigencies of the case and in proportion to the confidence placed in it. It is hardly necessary for me to say that I am an implicit believer in the perfect protection afforded by *perfect vaccination*." I may quote the much respected and worthy Dean of McGill College, Dr. Campbell, as entertaining the same view. His statement to me was in these words: "I have been vaccinating for over forty years, and I have never had an accident; and I have yet to learn of a single person whom I have vaccinated having taken small-pox afterwards." Also Dr. Trudel, the worthy Dean of Victoria College, said to me: "I have been using the stock of vaccine which I possess for the last forty years, and I have never had an accident of any kind; nor am I aware of an individual having taken small-pox whom I had vaccinated. I collect and preserve my own vaccine." What original source this lymph is from I have been unable to ascertain.

The experience just narrated of Drs. Campbell and Trudel, show, in my opinion, what results may be

expected from properly performed vaccination, with carefully selected virus.

If we go back to the original statements of Dr. Jenner, in 1798, we may find a clue to many of the defects which have been observed to result from vaccination since his time. In my researches of the literature on the subject, which is most voluminous, I find the earliest notice of the *cow-pox*, and its supposed powers in preventing the infection of small-pox, was found by Mr. Steinbeck to exist in a periodical work published at Gottingen in the year 1769. By this it appears the people of that country who had received the cow-pox, flattered themselves, that thereby they were secured against the infection of small-pox—a circumstance that does not appear to have arrested the attention of the physicians of Germany. It has also been asserted by a Dr. Barry of Cork that the cow-pox has been known in Ireland from time immemorial; and in the neighborhood of Cork it has been called *shinach*, a term belonging to the ancient language of the country, which has been applied to the disease as far back as oral testimony can be carried.

The COW-POX DISEASE,—which the weight of evidence, including numerous experiments and observations, goes to prove is identical with and only a modified form of small-pox—appears to have been familiar to the rural population of most counties in England long prior to Jenner's first experiments with it, particularly in Dorsetshire and Gloucestershire. And there, as from my own personal knowledge among the rural populations of Ontario, my native Province of Canada, the people reposed the fullest confidence, in the *presumption*, that those who had been spontaneously or accidentally affected with cow-pox, were thereby rendered proof against any future attack of small-pox.

I find a statement on record, also, to the effect that twenty years previous to Jenner's experiments, one Benjamin Jesty, of Downshay, Dorsetshire, had made the experiment of vaccination upon his wife and two sons with virus from a cow affected with cow-pox, in 1774. This record is taken from a memorial tablet of the gentleman, who was a layman, in the churchyard of the village of Worth, which, among other things, states that he was "particularly noted for having been the first known person that had introduced the cow-pox by inoculation." The *vox populi* in this matter seems to have been taken by Jenner, (then resident at Berkley in Gloucestershire) to have been the *vox Dei*, as it has often been in other things, and, catching the inspiration, he was led to make

some experiments with the matter of the cow-pox, the results of which he published in 1798.

The morning of the 14th of May, 1796, was a glorious one for *preventive medicine*, for that may be taken to have been the birth-day of vaccination. On that day virus was taken from the hand of a milk-maid named Sarah Nelves, who had been infected while milking her master's cows, and inserted by two superficial incisions into the arms of a boy named James Phipps or Philips, aged about 8 years. He went through the disease in a regular and satisfactory manner. The most agitating part of the trial still remained to be performed, for the point of greatest moment to Dr. Jenner was to ascertain whether he was free from the influence of the contagion of small-pox, which was put fairly to the issue on the 1st of the following July, or nearly three months later. Small-pox virus, taken immediately and direct from a small-pox pustule, was carefully inserted by several incisions, without producing infection. By this one experiment a law was established, which the experience of millions upon millions of the human family in subsequent generations has only served to strengthen. And yet, notwithstanding that these experiments have since been repeated upon about 4,000 vaccinated individuals by Dr. Woodville, and upon about sixty by Dr. Pearson in England, and on a smaller scale by Dr. Duncan Stewart in India; by M. Chaussier, Pinel, Hasson, Salmade, Jadelot, and others in France, with the same negative results, in every instance, that were originally obtained by Jenner; there are those among our French compatriots, and in our profession, who affect to disbelieve, or fail altogether to see, the truth, simplicity and beauty of that beneficent pathological law. But, as has been said, "There's none so blind as those who will not see."

The special advantages of cow-pox over small-pox inoculation claimed by Jenner were: *First*. Its uniform mildness, "that, out of two thousand vaccinated with the cow-pox, not one died, and therefore might be practiced in all ages with safety.

Second. It is not communicable by effluvia. Therefore any part of the family may be infected without affecting the rest.

Third. It does not disfigure the skin; and

Fourth. Requiring no medical attendance, it may be practised by any intelligent person—advantages of great value as compared with the dangers attendant upon the old practice of inoculation. Jenner was very explicit in directing that special care should be used in the details of the operation in order to ensure success details it would be well if many

modern practitioners would take the pains to follow. He says, for instance, "Care should be taken that matter be collected from *genuine cow-pox pustules* only, and before it begins to scab, or the matter becomes opaque and thick and the system be affected; for, if the matter does not enter the system, the patient will be liable to small-pox—," a result which I have little doubt frequently follows. In such cases there is little or no constitutional disturbance or fever, and the vesicle exhibits an imperfectly developed or abortive character.

"From inattention to these particulars," observes Jenner, "it has been suspected that the reports of the small-pox succeeding the cow-pox inoculation have arisen; for, *unless the matter be genuine* and the *constitution be infected*, the person cannot be secured against the small-pox contagion. It may happen that the inflammation excited by the inoculation with genuine cow-pox matter may remain local, *i. e.*, the inflammation may go on so as to form a pustule, without any portion of the matter being taken up into the system, when, of course, the subject must still be liable to small-pox infection. The same may occur from inoculation with small-pox matter."

The whole subject resolves itself under three pertinent queries:—

First.—Has vaccination, as a protective measure against small-pox, established a claim to confidence?

Second.—Is it an operation so harmless as to commend itself to our acceptance, or is it encompassed with dangers?

Third.—Have we any means that will guard us against the dangers attended upon vaccination, or secure to our patients the fullest measure of the prophylactic power conferred by it, equal or superior to a resort to the exclusive use of vaccine lymph obtained by direct transmission of spontaneously occurring cow-pox from heifer to heifer, or in other words by *animal vaccination*?

The best reply at our disposal to give to the first question is an appeal to facts, and the experience of the profession for the past 75 years.

The 539 replies received by Mr. Simon in 1856, including the names of the most eminent men of the day, as to the general value of vaccination, are sufficient to establish the favorable opinion entertained by the profession on this subject.

The bare fact alone, that confidence is generally imposed in vaccination by the most enlightened, the best educated, and best informed classes and communities; people whose faculty of observation is too astute to allow of their being misled by sophistry, or deceived

by false assumption, is in itself *prima facie* evidence that it has been fairly earned, and has not been misplaced.

This is a scientific period in which fact and experience reign supreme, and dogma and opinion take second place.

The sanguine hopes of Dr. Jenner, that "the annihilation of small-pox, the most dreadful scourge of the human species, must be the final result of the practice of vaccination," has not, and is not likely to be realized. But, that the practice of vaccination is worthy of confidence as a protection against small-pox; while the fact that the protection it affords is neither unconditional nor unlimited; but, that many of the conditions upon which it depends are under the control of ourselves; are self-evident propositions.

The first and most conclusive proof, in fact the only unexceptionable test which can be applied to an individual to show the degree of protection afforded by their having undergone the *vaccine disease*, is the "*inoculation test*" applied by Jenner himself and his early followers. What test could have been devised, more satisfactory, and more free from exception, than the direct introduction of small-pox virus, one cannot conceive; as no question can arise as to whether or not the vaccinated individual has been subjected to exposure to the influence of the contagion. I learn from the records of the early vaccinators that they were in the habit of taking great pains to give small-pox by contagion to persons who had recently been vaccinated; but invariably without success. Dr. Woodville, physician to the Small-Pox and Inoculation Hospital in 1799, finding a milkmaid who had become infected with cow-pox in a dairy in Gray's-Inn, inoculated seven persons by a single puncture from the teat of the cow, and subsequently endeavored fruitlessly to impart small-pox to them, both by inoculating the virus and by exposing them freely to the contagion. And, within two years, he transmitted the disease to 7,500 persons successively, one half of whom were subsequently inoculated with variolous matter without success. Dr. Pearson's experiments were upon sixty vaccinated individuals in 1804, but without imparting the disease; and in France, several physicians applied the *inoculation test* unsuccessfully. In India, also, I find that in 1841 Assistant Surgeon Russel inoculated with small-pox six natives who had been previously vaccinated, without success.

This test has always been regarded as the *experimentum crucis*, and may safely be undertaken in any case where animal virus, or virus of a

recent remove from the animal, has been used, and the patient has gone regularly through the several stages of the disease. Moreover, I believe it to be the duty of the profession to invite this trial, as the surest possible way of overturning the antagonism of the anti-vaccinationists, and restoring confidence among the public.

This has been disturbed on two points: first, as to the protective power of vaccination; and second, as to the purity of the lymph in use; and the danger arising from erysipelas, syphilis, &c., from which it does appear, that the second query demands a reply in the affirmative. This danger can be effectually provided against by the use of animal virus in preference to the humanized, and the former difficulty can be got over by the prompt application of the *inoculation test*, which should satisfy the most sceptical.

That there is no means open to us, whereby we may so effectually guard vaccine lymph against degeneration, and the possible contamination with blood taints of constitutional diseases, as by animal transmission, is not only *prima facie* self evident, but this view is endorsed by some of the finest minds in the profession.

UPON WHAT HYPOTHESIS CAN POST-VACCINAL CASES OF SMALL-POX BE EXPLAINED.

Vaccinia is but one member of a group of exanthems among which *non-recurrence* is the rule, and a second attack in the life-time the exception; and another is *small-pox*; with which *vaccinia*, as one of the varioloid maladies, has the very closest relationships; so close, that the vaccine disease, when undergone destroys that in the human system which imparts to it the capability of developing *vaccinia*.

Now, the rule is that small-pox only occurs once in a life-time, yet secondary attacks are frequently met with in every recurring epidemic. The rule is that one attack of small-pox destroys for a life-time the receptivity of the system for the same disease, but not always.

Dr. Jenner mentions a Mrs. Grinnet as having had the small-pox five times. Dr. Baron mentions a surgeon who was so susceptible that he could not attend a case of small-pox without taking the disease. Mr. Simon narrates a case on the authority of Mr. Baker that was severely pitted in two attacks, and a Mr. Inhausen gives a narrative of a lady who was pitted and scarred up in three successive attacks; also two years ago I lost a patient sent to Small-Pox

Hospital with a second attack; and I have heard of several other cases.

If, then, says Ballard, an attack of small-pox—which is a disease natural to man—does not always, even when severe, destroy forever the receptivity of the individual suffering it; it can surely be no matter of surprise, that, in occasional instances, vaccinia—a disease foreign to men—should fail to effect that which an attack of small-pox, itself, does not always accomplish.

But, it is asserted that if vaccination does not invariably confer immunity from an attack of small-pox, it renders it less severe, by exercising a most marked modifying influence over the progress and issue of the disorder.

But, again, there are some conditions on which the protective power of vaccination depends which are under our own control; then, what are these?

First, then, it is within our own power to secure *perfect* vaccination, in other words, to secure the fullest protective power of the vaccine disease, and this depends upon the perfection of its development as an exanthematous disease; upon the closeness of the similarity it exhibits to small-pox in its process of development, in truth, upon the perfection of the substitution.

The production of a *perfect vesicle* is alone insufficient without the constitutional disturbance, both are equally important, because both are pathologically associated. The *areola* indicates the incapability of the system to undergo further impression, and the development of the *vaccinal fever* and *areola* indicate that the system has become fortified against the receptivity of *small-pox virus*, even by inoculation, at any future time.

As to the local phenomena, the fulness of the eruption and the number and character of the vaccine vesicles are to be considered.

The degree in which protection from small-pox depends upon the character of the vesicle produced by vaccination is very considerable; as imperfectly developed or abortive vesicles are a sure indication of some defect either on the part of the *virus* used or the patient's constitution, and demands an application of Bryce's test of re-vaccination upon the other arm on the fifth day. A well-developed vesicle, with a well marked areola, which usually appears on the eighth, sometimes not until later (I have had it appear on the 10th, and, in one case, no appearance of the arm taking appeared until the 12th day, which caused the appearance of the *areola* to be deferred until the 15th day, but these cases are exceptional) and a profound vaccinal fever, are the best indications of a successful vaccination.

About the fifth or sixth day, usually, (sometimes later with Longue Pointe virus) a red pimple may be felt at the point of vaccination, which gradually increases in size and prominence until the eighth day, when it is fully developed, and usually presents the appearance of a *small-sized bead of pearl* set in the skin. After the areola has developed it answers very well to the description of a *bead of pearl upon a rose leaf*. The nearer the animal, the smaller, more circumscribed, harder, more elevated and firm the vesicles appear. Generally there are a number of them; corresponding to the number of points of infection, which usually coalesce and, running together, form a larger scab, of a brownish mahogany colour, thick and elevated, and, when held up to the light, translucent in appearance. I have never had any suppuration or ulceration as yet in any case from this virus: Good, well-filled vesicles, always leave good well marked circular scars; which may be seen plainly at a distance. They are very distinct, sunk beneath the level of the surrounding skin, having a rather well marked edge, and foveated or dotted with minute indentations, in a few cases striated, the fovea being most numerous near the outer circle of the depression.

In every case, where the vesicles are not well developed and full, I have taken the precaution to re-vaccinate upon the other arm, in which case the second seems to add intensity to the first, both mature, and the crusts fall off at about the same period, or from the sixteenth to the twentieth day.

There are three tests recommended as applicable in judging respecting the amount of protection any case of vaccination has afforded:—1st. The subsequent inoculation of small-pox virus, or Jenner's test already spoken of; 2nd. The result of casual exposure to contagion; and, 3rd. An attempt to reproduce the disease by re-vaccination, or Bryce's test. As to the value of the first there can be no question whatever; as to the second, the length of time after vaccination and the degree of exposure will determine the result. All other things being equal those persons having good scars on their arms are less frequently attacked with small-pox than people with bad scars. But all persons are not equally exposed, and this mode of reasoning is fallacious, for one good mark with strong fresh virus would be more protective than several marks with old deteriorated virus, as I will presently shew. Drs. Jenner and Woodville's original tests with small-pox, were all made upon persons upon whom the animal virus had been used in *one point* only,

direct from the *teat* of the animal ; and yet we have statements made by Dr. Marson, of the London Small-Pox Hospital, that out of 2787 patients with cicatrices on their arms 486.9 per 1000 had *one mark*, 318.6 per 1000 had *two*, 98.3 per 1000 had *three*, and 96.2 per 1000 had *four marks* or upwards. Dr. Roddick, also, in a paper read before this Society, gave ample proof of the greater protection afforded by a large or a small number of marks ; shewing that *two* vesicles is more than twice as protective as *one*, and the production of three or more nearly four times as protective against the casual contagion of small-pox. And yet small-pox does not always spare in its attacks persons who have multiple scars of vaccine upon their arms ; while, on the other hand, a single vesicle has in innumerable instances served as a protection, both against the inoculated virus and against the influence of casual contagion. In fact, it was upon the protective operation of single vaccine vesicles, that the reputation of vaccination, as performed by Jenner and the earlier vaccinators, was built up ; a most conclusive proof that more depends upon the quality of lymph used than the number of marks.

Perfect vaccination having been secured ; which, in my opinion, entirely depends upon the production of perfect vesicles, with areola and constitutional fever, and not mere *vaccinal scars* ; the next question which naturally arises is, how long does the protection against small-pox afforded by vaccination continue ? Is it limited in duration ? I do not see any reason why it should not be equally enduring with that afforded by a previous attack of small-pox. I think *perfect vesicles*, secured with fresh *animal virus* ; or a first or even fifth remove, if procured from *perfectly developed vesicles* at the proper period ; should afford protection that would last during the remainder of life. I look upon re-vaccination as a most prudent precaution against imperfect primary vaccination, but a precaution that in most instances will prove to have been uncalled for where the work has been thoroughly done with active virus in the first instance. Re-vaccination is Bryce's test of perfect vaccination reduced to a general rule in practice, and which seldom results in producing a *perfect cow-pox pustule*, but merely a *vaccinal sore*, which illustrates the fact that the pabulum in the blood upon which it feeds has been too much exhausted in a previous attack to enable it to produce a perfect result a second time. Now, have I any authority for such a statement ? We shall see. Jenner and Woodville entertained this

view, but their experience was limited to their own personal observations. But Ballard says : " In the large majority of vaccinated persons the protection against casual small-pox obtained by the time that the vaccine disease has completed its course *lasts for the whole remainder of life.*" That, except in a small number of persons, vaccination is a *life-long* protection against all ordinary and even against extraordinary chances of contagion.

This point being established, I proceed to the question, Does vaccine virus in its transmission through successive human generations lose any of its activity, or become less effectual when developed in the system as a protection against small-pox ? My answer is, it does, and I shall adduce ample evidence to establish this view.

The first thing that suggests itself here is that the vaccine disease being unnatural to man—a disease of an animal lower in the scale of organization, implanted upon man by art—it is not improbable that some careful cultivation would be necessary to prevent its degeneration. Experience has demonstrated that the disease (*vaccinia*), when imparted to certain subjects, produces in them an imperfect or modified development ; and that lymph taken from such pocks, or from vesicles which are too old or damaged, has so far lost its character as to give rise, when introduced into the system, to an imperfect vaccine disease. This then is *one proof* that in *vaccinia*, degeneration of virus does take place under certain circumstances ; while that in succeeding generations the quality of the virus may not recover itself, although that of modified small-pox may do so, is quite explicable by the fact that small-pox is in its native soil in man, while *vaccinia* is in a foreign soil, having been transplanted from a lower animal. This, however, is not all that is meant by *degeneration of vaccine virus*. On this point Ballard says :—" It is said that the virus degenerates by successive human generations, even when the utmost care is taken in the selection of the vaccifer, and in taking lymph from pocks of the proper age. Is this so ? I believe it is." Probably with this danger in view, Jenner, from an early period, recommended that recourse should be had anew to the cow, as a source of vaccine lymph, as frequently as possible.*

* NOTE.—It may be important to say here that a current statement among anti-vaccinators. (and made use of by Dr. Coderre, of Montreal, (on the authority of Baron) that "Spontaneous cow-pox is not protective against small-pox" is not founded on fact, but is the result of a clear perversion of a statement of Jenner in which he guards his followers against mistakes by pointing out the exist-

In 1814, the opinion that the vaccine lymph gradually lost its power by successive human transmissions was put forward by Dr. Kinglake, who recommended that fresh lymph should be taken as often as possible from the cow.

In 1818, the Government of Wurtemberg, in deference to this opinion, endeavored to provide for a renewal of the virus from *animal vaccination* by directing that a certain number of cows should be vaccinated annually.

M. Brisset of France and Dr. Gregory of England endorsed this view in 1823. In 1836, Dr. Gregory wrote as follows: "The lymph in use at this Small-Pox Hospital, (London) has been preserved in uninterrupted descent for a very long period of time; but for three or four years past I have noticed that its intensity was diminished, and that eight or ten incisions produced not more irritation than the three to which I was accustomed fifteen years ago. In March last (1836) the resident surgeon obtained lymph from a new source. This new lymph was found to be more intense and active than the old. Three or four incisions are now found amply sufficient, and so satisfied was I of the superior quality of this new lymph, that, after a careful trial of about two months, the old (Jennerian) lymph has been suffered to die out, and for the last six months we have vaccinated exclusively from the new stock. These facts have convinced me that vaccine lymph, in passing through the bodies of many persons, loses in process of time some essential portion of its activity. It follows from this, that an occasional resort to primary lymph from the cow

ence of *two distinct diseases* which occur on the *teats* of the cow. One, the genuine cow-pox pustule, of rare occurrence, and one of more common occurrence, namely, suppurative sores from wounds, stings of insects, cracks, &c. Jenner says: "Pustulous sores (he does not say pocks) frequently appear spontaneously on the nipples of the cow and instances have occurred, though very rarely, of the hands of the servants employed in milking being affected with sores in consequence, and even of their feeling an indisposition from absorption. These pustules are of a much milder nature than those which arise from that contagion which constitutes the *true cow-pox*.....They are always free from the *bluish* or *livid* tint so conspicuous in the pustules in that disease. No erysipelas attends them. This disease is not to be considered as similar in *any respect* to that of which I am treating, as it is incapable of producing any specific effects upon the human constitution. It is of the greatest consequence to point it out here lest the *want of discrimination* should occasion an idea of security from the infection of small-pox which might prove delusive." Thus clearly discriminating between two distinct affections occurring on the cow.

becomes a matter of the greatest importance, perhaps even of indispensable necessity."

In the same year comparative experiments were made in France by the Vaccine Committee of the French Academy, which led to a complete abandonment of the opposite view which had been strenuously maintained by M. Bousquet and others, and gave a solid basis to the opinion.

In 1838, Dr. Estlin of Bristol wrote as follows, speaking of the old or Jennerian stock: "On the diminished anti-variolous powers of the present stock of vaccine matter I need make no remark, the public are too painfully aware of the fact." This remark is applicable to Montreal.

In Germany Drs. Medicus and Orgy noted the gradual changes in the cicatrices following vaccination as being less perfect.

In 1839 Dr. Stewart compared results in India with old and new virus, giving in detail his observations as follows: "The period of latency was much longer. 2nd. The vesicles are larger and have globular disc more exact and circular, contain clearer lymph and more of it, and have a central depression from outset. Third. The areola is more decided and larger, the color and formula strictly Jennerian. Fourth. The constitutional fever is well marked. Fifth. The course of the disease is slower and more deliberate.

A Dr. Straub, of Germany, is stated to have vaccinated successfully two children. The lymph furnished by the one produced very fine vesicles, that furnished by the other produced normal vesicles in the first generation, but could not be propagated at all beyond the second remove.

A similar experience occurred to myself not long since. On October 26th I took from a calf at Logan's farm a number of points, with which I vaccinated successfully the child of Mrs. E——, 411 Seigneurs street, from which I collected, on November 5th, a quantity of excellent lymph, all of which gave splendid results, no failures. With the same source of lymph I vaccinated a child of Mr. J—— L——, 121 Canning street, from which I obtained first-class crusts, which gave every satisfaction in further transmission by those to whom sent. I also vaccinated the child of my friend Dr. H—— from this source with excellent results, and from which, on November 11th, I charged about fifteen points which were forwarded on same day to two widely separated points of the country. From both medical men the envelope was returned as unsuccessful. I have not been able to explain the circum-

stance, as the vesicles upon Master H. were most superb, and the lymph, when taken, clear and beautiful, but it did not propagate itself.

The growing frequency with which varioloid disease and true small-pox are observed in vaccinated persons has been adduced as an argument by some writers. The greater success attendant upon re-vaccination of adult subjects than formerly is another argument—fewer failures and better results. The experience of re-vaccination in the Prussian Army has been appealed to. This extends to 45,000 operations annually. The statistical results are given from 1833, when the proportion of successful results was 33 per cent. and afterwards gradually increased as follows: 39, 42, 46, 49, 50, 51, 54, 57, 58, 57, 57, 58, 60, 64, 64, 64, 61, 64, 69, 69, 69, 69, 70. The last proportion of success being more than double the first of the series. Dr. Ballard, referring to these statistics, says: "There can be only two explanations of this remarkable fact, the one, that the virus has degenerated in its protective power, as the result of frequent human transmissions; the other, that there has been a steadily progressive carelessness in the mode in which the primary vaccinations have been performed, and that this carelessness has resulted, as I have shown it may result, in a deterioration of the virus." He gives as the *best evidence* of the deterioration which vaccine virus undergoes in the course of frequent human transmissions that obtained "by comparing the effects produced by selected lymph which has undergone numerous human transmissions with that produced by lymph recently derived anew from the cow, or after having passed through only a small number of human generations," and gives a number of comparisons that should convince the most skeptical. My own observations with Longue Pointe lymph in this regard has been this: The period of latency is greater; no sign of taking is seen before the 6th day, in some cases not before the 8th, and I have had it as late as the twelfth day. The vesicles are small, circular, firm, well elevated, having from first a depression in centre, very distinct, but, where a number appear together, will coalesce, retaining their distinctive outline throughout. They mature usually on eighth day, in the later part of which the areola usually begins to appear, and is well formed by the 9th. There is a good deal of restlessness and fever after the appearance of the areola, which is at its height on the tenth day, after which it and the areola decline together and are usually gone on the 12th day. From this time the

pustule, which on the eighth day is full, tense, white and shining, and if pricked yields abundant lymph, clear as water, begins to dry and look dull, a brownish crust takes the place of the *bluish* central depression, and by the 18th to 21st day a thick circular, somewhat conical, mahogany colored, well defined crust falls off, leaving a depressed cicatrix full of fovea or pin-pointed depressions. I have observed after a few removes from the animal that the whole progress becomes more rapid, the crusts more spread out, flat and irregular, so that I say when the crust begins to be as large as a *pants button* it is time to go back to the animal virus, which gives you again the small circular elevated vesicle, resembling a bead of pearl upon a ground of rose pink colour.

Taking the possible degeneracy of vaccine by human transmission to be proven, it is necessary that this degeneracy should be prevented as much as possible by care on the part of the propagator in the selection of the vaccinifer (which should be the young bovine animal) and the pock. On this point Dr. Ballard says:—"The vaccinifer (if human) should be "robust, not cachectic, the pock selected should be "perfect in character, and the lymph should be "taken at a period *prior to the appearance of the "areola*. The principal causes of bad and un- "protective vaccination are *the use of lymph taken "at too late a period in the course of the disease,* "taking lymph from vesicles badly developed or "imperfect in character, the use of dry lymph or "scab instead of limpid lymph. The lymph for "vaccination," he continues, "should never be taken "after the areola is formed. When the areola is "formed the lymph ceases to be limpid, is imper- "fect in power, and apt to give rise to imperfect or "modified pustules. According to Sacco and Eichorn "the lymph is distinguished for energy on the fifth "or sixth day, or while the nascent vesicle is still "undeveloped. When the vesicles on the vaccinifer "are small and poor they are apt to reproduce their "kind, and in this way a supply of lymph may "degenerate in quality." In producing humanised vaccine, direct from animal lymph, I select the most scrupulously healthy children, of robust, healthy parents having perfectly developed vesicles. From these I prefer to take the lymph when it has attained its greatest perfection, which one has to be on the *qui vive* for, and always before the areola has appeared; after this the lymph becomes purulent and opaque, and is very subject to oxydation and decomposition, as Schonbein has shown, probably more rapidly in some conditions of the atmosphere

than others, as it readily decomposes the peroxide of hydrogen, and is subject to the ordinary decomposition which animal substances undergo when exposed to heat and moisture, and to the generation within it of organized beings or animalculæ as in other decomposing animal fluids. For these reasons I believe the occurrence of erysipelas or septic inoculation has frequently followed the use of *putrid lymph*; as I am certain it frequently has the use of crusts imbued with *pus*; the result of excessive local inflammation and consequent suppuration in persons of a strumous habit of body. In this matter, as elsewhere, we reap what we sow. If vaccine, then only vaccine; if pus, septic poisoning, suppuration, inflammation. On this point Dr. Martin, of Boston, says: "Before the appearance of the areola there is no pus in or around the vesicle; afterward there is no security from its admixture with the lymph." The knowledge of the exact period at which to obtain perfect virus is the one great and essential item of knowledge necessary to success in the specialty of animal vaccination. During my own experience I have frequently eschewed very reluctantly the most splendid vesicles where my visit had been anticipated by the areolæ.

"Having shewn that under the best possible selection, and with the utmost care in cultivation," writes Dr. Ballard, "the vaccine virus loses energy as its human transmissions become more and more numerous, so it follows that, from time to time, it is desirable that new sources of primary supply should be sought for and opened," which, he says, involves two questions: 1st, the frequency with which natural or spontaneous cow-pox is met with on the cow as a source of renewal of supply; and, 2nd, whether the object can be attained equally well by any other means, and concludes by recommending a recurrence to natural cow-pox as a source of lymph, which he is particular to state has one practical drawback, which is, "the rapid passage of the eruption on the cow's teat through the stage at which it is most energetic, and which is said sometimes to be over in from twelve to twenty-four hours," a fact which my limited experience has fully attested, and which adds very much to the risk of failure in the use of animal virus.

If it could be ascertained at what human remove from the cow permanent protective power first becomes impaired to an important degree, and if such virus could be fully insured from syphilitic contamination and liability to erysipelas, etc., all rational objections to the use of early human removes would

be ended. Such knowledge and security are not attainable, and, therefore, the only absolutely safe course is to use either virus of original cow-pox, or that transmitted through a series of selected bovine animals.*

RETRO VACCINATION OF ANIMALS WITH HUMANIZED VIRUS.

This has been done successfully by Bosquet in France, Babcock and Ceely in England, Goldwin in Venetia and many others, but without any particular advantage to the lymph in the way of improvement.

ANIMAL VACCINATION, direct from heifer to heifer, in unbroken succession from original cases is the *one thing needful* to preserve a continuous supply of *undegenerated* lymph for the purposes of human vaccination, as by this means a far more perfect development of *vaccinia* is obtained than from long humanized virus. Through the kindness of my friend Dr. F. W. Campbell I am enabled to illustrate the appearance offered by spontaneous cow-pox on the cow's teats and udder in two stages by Ceely's admirable plates, also the appearance of artificial inoculation of cow-pox and small-pox, and the effects exhibited on the animal by retro-vaccination. I have also Willan's illustrations of *Roseola Vaccina* and *Variolosa*, and a number of paintings illustrative of first removes from animal virus of the Longue Pointe stock.

Troga of Naples was the first to conceive the idea of taking the virus from a vaccinated cow for the purpose, and the practice was pursued by him and his successors for many years for the benefit of the upper classes of society. Galbatia continued it, and M. Negri followed at first in their steps in propagating virus obtained by a primary retro-vaccination, but obtaining three different times a fresh supply of virus direct from cases of natural pox, he maintained a supply by an uninterrupted succession of inoculations from animal to animal, so that to M. Negri we owe our knowledge of the practice of animal vaccination as it is now understood.

* Dr. George Wyld, London, Eng., a most prominent apostle of vaccination direct from the calf, is now engaged in providing London with a supply of pure lymph by inoculation from heifer to heifer, and calf to calf. He purposes to "multiply spontaneous cases by passing it through a series of calves *ad infinitum*, if necessary," and claims that "a government which renders vaccination compulsory is in duty bound to supply a lymph with total freedom from syphilis."

I must now pass over Janoix to refer to Professor Depaul of the French Academy, who announced in May, 1866, now twelve years ago, that cow-pox had been discovered at Beaugency, France, and that it had not only been used as a new source for human transmissions, but also for transmissions, by animal vaccination, from heifer to heifer. Several *advantages* were also urged in favor of animal transmitted lymph: 1st. The advantage of being able to renew at will a stock of vaccine by return to the animal. 2nd. Freedom from all possible syphilitic contamination. 3rd. The ability to furnish large amounts of virus regularly and at short notice, avoiding the necessity for a *vaccine famine*. 4th. That it avoids the necessity of interference with the process of development of human vesicles by tapping, which some fancy interferes with the protection afforded. Jenner, on this point, counselled the development of one vesicle at least without interruption. 5th. The importance of being able to obtain virus from a reliable source. 6th. The immunity of animal virus from erysipelas. 7th. The more perfect sear it produces. The results of animal vaccination as pursued in Paris by M. Chambon, under the direction of Professor Depaul; and at Brookline, Boston, by the younger Dr. Martin, under the supervision of the elder (who has a large experience); corresponds in all important particulars with those obtained from the use of *animal virus* or the *early* removes of it, propagated up to the present by myself from the spontaneous cases of natural pox found at Longue Pointe, Island of Montreal, November, 1877. In all cases with animal virus there is an absence of all undue irritation; there is a remarkably slow and deliberate growth or evolution (in this respect differing greatly from the humanized); the pock is distinct, circular, cupped, elevated and firm, and the areola is comparatively late in appearing; the lymph remains longer limpid, the decline and incrustation is slower or more gradual, and the crust is tardy in falling.

At first the difficulty attendant upon the vaccination and collection of lymph from the animal I found, owing to inexperience, to be very considerable, but, by persistent perseverance, the difficulties have been gradually overcome. I now adopt Depaul's plan of having a table with a swinging cover or flap similar to those used in handling plate glass. Its lower edge is cut out with a triangular notch, leaving an extension before and behind to correspond with the extension of the animal's limbs. It is a strong wooden frame, and is firmly fastened down to the floor, so

as to be immoveable. The flap being let down, the calf or heifer (only animals of the female sex and from six months to two years old are used) is placed with its left side against it, and securely fastened by a waist belt and a belt around the flanks; (the former just behind the forelegs, the latter just in front of the hind legs); the flap or table leaf is now turned up horizontally, and the head and feet having been secured by extra straps, the animal lies helpless and unable to struggle. The belly is then shaved with a dry razor; a strip about 18 inches long and 9 wide on each side of the udder, also the inside of the hip behind, or where the skin is most delicate, in strips about 9 or 10 inches wide. Over these surfaces a number of abrasions are made, and the virus (contained in glycerine usually) well rubbed in. I hope soon to be able to vaccinate so frequently as to take the lymph from the animal and apply it to another at the same moment, without an interval of some days, as has been the case with me heretofore. In this way I would have a greater percentage of success, and obtain more lymph from each animal. My success has been limited only by *want of funds*, which has been a great obstacle to my progress with this enterprise. The animal has to be so secured in a stable with clean straw, etc., as to prevent subsequent injury to the pocks by licking or biting, and the destruction of lymph by lying in its own manure. From the fourth to sixth day lymph must be taken for the vaccination of children,—lymph taken at this stage of the disease is nearly always successful,—but for propagation upon the animals a day later will do, or just before the pocks begin to decline and form scabs. The lymph is thought to be more perfectly developed by the seventh day, but is too thick in consistence to be possible of absorption by the human absorbents. If not taken until too late in the disease the lymph will not take on the human subject. The animals recover in a fortnight, and are quite uninjured by the process, but are protected against any future attempts at inoculation. In all my experiments on animals I have had an encouraging degree, but not always the same success. Out of seventy points of abrasion I may get from sixteen to twenty pocks, which are sometimes distinct, sometimes confluent, and attain the size of large human pocks or about the size of a pea, and are filled with a white milky (or clear watery fluid when it exudes) of the consistency of the albumen or white of egg. The central depression has a peculiar slate blue or grey appearance. Cleanliness is the great difficulty to secure, without which disappointment in degree of

success is met with. When the vesicles have a bluish-white, shining appearance they are at their fullest degree of perfection. I trust a Government allowance may yet be granted to enable ample provision to be made for carrying out successfully the details of this process of production of animal lymph, and that the profession will avail themselves fully of its unquestionable advantages offered.

Animal vaccination is the national method in France and Belgium, and has been introduced in Berlin, Vienna and St. Petersburg in Europe; and for some time past in Boston, New York, and Philadelphia, in America;—an adoption in a number of widely separate and influential points difficult to account for on other than the real advantages which attach to it. The two most prominent of these seem to be: 1st, the absolute security which it affords against all kinds of human blood contaminations; avoiding all possibility of syphilization, that standing menace of every vaccinator who ventures the use of humanized virus; and, 2nd, the greater degree of protection which it affords as a prophylactic against the contagion of variola; respecting which M. Lanoix says: "For twenty years past epidemics of small-pox in Naples have never acquired any great severity; and it is an opinion held by the inhabitants that persons vaccinated with animal virus are not now exposed to danger from small-pox, like those who in their infancy were vaccinated from arm to arm."

I confess I should be glad to see animal vaccination established on a firm basis in this country,—where we have the reputation of nursing small-pox, as Cleopatra did the serpent, in our bosoms, in order that it may have a fair opportunity of striking its deadly infection into our very vitals or those of our children,—as a preventive against small-pox. I am convinced there is none equal to it; and I believe that such good would flow from it that practitioners desirous of imparting the fullest protection to their patients could have recourse to the vaccinated heifer for their supply. If the public and private vaccination of the City of Montreal were done with animal vaccine only for a few years, I believe the insusceptibility that would be created would result in the effectual riddance if the city of this foul pestilence altogether; for it is my implicit belief that the great susceptibility of our population to small-pox, shewn during the past few years, can only be justly attributed to the insufficient protection afforded by the long humanized and deteriorated vaccine matter, which has been used for so many years; and

which, by repeated transmission through thousands of systems, had become enfeebled and virtually worthless as a prophylactic agent. Having obtained lymph from the animal, it is well to understand its peculiarities and wherein it differs from humanized lymph, or the lymph from the human subject, to the end that we may have an intelligent appreciation of the precautions necessary to ensure successful results in its use. It is more *plastic* than the human; in fact, animal vaccine is contained in animal albumen, or is so mixed with it as to give a viscid glairy fluid which dries upon the ivory point as a thin film or varnish like isinglass; which is not readily soluble in the serum or blood which exudes upon the arm in vaccinating; but requires that the precaution be observed to dip the point in cold water previous to use, to soften the albuminous film thereon; after which, it may be rubbed thoroughly over the scratches with the certainty that it will be rubbed into the wounds, that the wounds will be infected thereby, and the infection become absorbed into the system and produce its characteristic results. 80 per cent. is a good proportion of success with this lymph. Humanized lymph is more readily soluble, hence fewer failures follow its use in general practice. Success here should not be less than 90 per cent., but the difference in the character of the lymph being known, I am satisfied my colleagues will become as successful in its use as elsewhere. The earlier any lymph is used, the more certain the results and the more satisfactory. Failure with properly collected animal virus of a proper degree of freshness is a very rare circumstance indeed; always supposing it is *used properly and with due care*. Herein all the merit lies; the fault is not with the *animal virus*, but with *the men that use it, and the manner of its use*. Although a lack of knowledge on the part of a propagator of the *peculiar state* of the vesicle in the heifer, and period at which virus exists in its most perfect condition, has no doubt caused the issue of virus at times which did not possess the necessary degree of activity; this defect a propagator will very soon become painfully aware of by having his lymph returned as *inert*.

One word in reference to the Longue Pointe stock of vaccine virus and I have done.

Owing to Professor McEachran's prognostication, that an epidemic of cow-pox would probably follow that on the horses in the spring of 1877, I was on the lookout for it, and made known my object to some of my colleagues, among others Dr. Hingston. Learning from Mrs. Loney of Longue Pointe of

the existence of the disease among her husband's cows, he made known the fact to me, and early on the following morning, Nov. 6th, 1877, I visited the farm, in company with a colleague, and finding six cows affected in various stages of the disease I procured a large number of crusts and some lymph in a rather advanced stage. With this stock I at once began operations, vaccinating ten children during the next day or two, and using every possible care to liquefy the vaccine as much as possible before using. In nine of these no result was obtained, but in one I had a single vesicle of perfect characteristics. The progress was very deliberate, but tardy in comparison with my former experience with humanized lymph. It was vaccinated on the 7th, and on the 17th it was seen by Drs. Hingston and Larocque. In the company of the latter I procured about 100 points of clear beautiful lymph. Some of these I distributed to members of the profession, and with the balance I obtained a number of splendid results of the 2nd generation, giving more plump and otherwise characteristic vesicles. From one of these second removes, the child of a Mrs. Reaves, No. 30 St. Urbain street, I obtained a large number of points, with which I furnished a supply to the various public vaccinators, charging 150 points for the Health Office. On visiting the Leney Farm a week later I was fortunate enough to procure more lymph, in better condition, and with this I succeeded in vaccinating a child of a Mr. Leprees, after a second trial (residing in 504 St. Joseph street). From this case I was able to charge in company with Mr. McEachran, medical student, a large number of ivory points. From this time forward I had no difficulty in keeping up a liberal supply of lymph by successive transmissions through healthy children, from none of which have I had any complaint. Feeling desirous of trying its effects on the animal, and having a great quantity of my original virus carefully put away, I obtained, as best I could, the consent of milkmen to vaccinate an animal with the virus. In every case I was more or less successful; on two or three occasions too much so, as it communicated to other animals and interfered with the operations of milking. During the past summer and autumn I have transmitted it through about 30 animals on Logans' farm amply sufficient to keep up the activity of the virus. This I find keeps best in glycerine in a cold and dark place. I trust the results of animal vaccination may yet prove so satisfactory to the profession of Montreal, and the Dominion of Canada as to become eventually the only source from which vaccina-

tions will be performed; as I am convinced it is the only perfect safeguard against impurity and degeneracy of the lymph. I am indebted to the great kindness of my friend, Dr. F. W. Campbell (an old public vaccinator), for Ceely's plates, illustrative of cow-pox; spontaneous and artificial; also Retro-vaccination and Small-Pox Inoculation in Animals; a reference to which may not prove uninteresting; and I cannot close without acknowledging my indebtedness to Dr. H. Martin, Boston Highlands, for much valuable practical information on the subject.

Thanking you for your patient hearing, and apologizing for the undue length of my paper; in which I have been unable to discuss the pros or cons of the question of the transmission of syphilis; ample proof of which is given in Tanner's Practice, pp. 150. Hutchison's Plates, Martin's "Animal Vaccination," and other authors ancient and modern. I am obliged to leave the matter with you thus unfinished, in the hope however, that other opportunities may yet be afforded for discussing the several points involved in the subject, seriatim.

Progress of Medical Science.

TREATMENT OF OBSTINATE VOMITING DURING PREGNANCY BY DILATION OF THE CERVIX UTERI.

Dr. Murillo resorted to this remedy, as recommended by Dr. Copement, of Norwich. He introduced the finger into the cervix as far as the internal os, kept it there for two minutes; the cervix was thus dilated four different times, at intervals of one or two days, and morphia given to produce sleep, which did not have the desired effect. At the end of one week the improvement was marked, and in eleven days a perfect cure was effected.—*London Medical Record.*

PYROGALLIC ACID IN PSORIASIS.

(DR. A. JURISCH.)

We have already in our July number, on page 208, given a resume of some experiments made with pyrogallie acid as a substitute for chrysophanic acid in psoriasis. The author now reports his complete success in the treatment of this affection by the agent indicated. At first he used an ointment containing twenty per cent. of pyrogallie acid; this was, however, found to produce excoriations. Hence, he has

reduced the ointment, as ordinarily used, to the strength of ten per cent., and in some cases he uses it only of five per cent. If spread on muslin, and then applied, it must be still further diluted, otherwise it acts as an irritant. Aqueous solutions should contain about one per cent. Pyrogallic acid acts not as rapidly as chrysophanic acid, but is equally certain in its results.

POULTICES.

The common practice in making poultices of mixing the linseed-meal with hot water, and applying them directly to the skin, is quite wrong, because, if we do not wish to burn the patient, we must wait until a great portion of the heat has been lost. The proper method is to take a flannel bag (the size of the poultice required), to fill this with the linseed poultice as hot as it can possibly be made, and to put between this and the skin a second piece of flannel, so that there shall be at least two thicknesses of flannel between the skin and the poultice itself. Above the poultice should be placed more flannel, or a piece of cotton wool, to prevent it from getting cold. By this method we are able to apply the linseed-meal boiling hot, without burning the patient, and the heat, gradually diffusing through the flannel, affords a grateful sense of relief which cannot be obtained by other means. There are few ways in which such marked relief is given to abdominal pain as by the application of a poultice in this manner.—Dr. T. Lauder Brunton, in *Brain*.

DISLOCATIONS OF MUSCLES AND THEIR TREATMENT.

British Med. Jour.: Mr. Callender remarks that but little attention has been paid to this class of injury, though they are followed by considerable inconvenience, by pain often of long continuance, and by interference with the very amusement or occupation in the practice of which they have been sustained. Mr. Callender refers to various cases of displaced tendon, as of the biceps, the tendons about the wrist, and the peronei, in all of which, while the reposition of the tendon is not very difficult, the unsatisfactory feature of the treatment is the impossibility of preventing in many instances the recurrence of the displacement. He then proceeds to consider dislocations of the muscles themselves, and the following may be taken as a typical case: A man, aged forty-six, was playing at lawn-tennis, when he felt a sudden movement, with intense pain, in the right forearm. He rested the arm, had advice, but the pain persisted. When the accident happened the forearm was suddenly thrown into the extreme of pronation while he was making a

back-stroke. On examining the arm Mr. Callender found there was tenderness along the course of the pronator radii teres, and the pain in the fore-arm was severe when the hand was moved in pronation. The hand was brought into pronation, and with a pad fitted to and applied over the course of the pronator firm pressure was made upon the muscle, while the hand was carried to the extreme of supination. The pressure, the patient said, gave relief, and on removing it the pain had ceased; the forearm could now be freely moved. The parts were rested in a sling, and he was told to keep the arm quiet. In two days' time he again tried the muscle at lawn-tennis, and again the pain recurred. The muscle was again returned to its place, and this time the arm was so fixed that the muscle was secured against further dislocation, and, as no movements have since been made which would cause its displacement, the patient has remained well. As general rules for reducing dislocation of muscles, Mr. Callender recommends that an accurate diagnosis should first be made of the muscle dislocated; secondly, the muscle should be relaxed as far as possible; thirdly, by firm manipulation, such as the rubbing with the hand, or by kneading with the thumb, an endeavor should be made to replace it; and, lastly, pressure should be made while the muscle is on the stretch.

THE TREATMENT OF SEA-SICKNESS.

C. J. S. Digges, M.R.C.S.E. (of St. Louis, Mo.), recommends hypodermic injections of morphia over the epigastric region in sea-sickness. In 200 passengers experimented upon, the majority were completely and permanently relieved; in the others, relief for twelve to forty-eight hours followed, allowing the partaking of food during the interval.

TREATMENT OF OBSTINATE SCIATICA BY SUBCUTANEOUS INJECTIONS OF NITRATE OF SILVER.

Dr. Dureau has collated the cases of obstinate sciatica treated in the Parisian hospitals by Damaschino and Guérin-Rose, on Luton's plan, and has deduced from them the following conclusions:

1. The subcutaneous injections of nitrate of silver are to be recommended in cases of inveterate sciatica.
2. These injections, though irritating to the tissues, may be undertaken without any fear of evil consequences.
3. The method renders it possible to reach the diseased spot and to insure the action of the remedy.
4. Improvement and recovery take place rapidly under this treatment.
5. The subcutaneous injections of lunar caustic are more active and less dangerous than the

actual cutting, which is so frequently recommended for sciatica.

Luton employed a ten per cent. solution of the nitrate of silver, and injected from twenty to twenty-four drops, but Guérin-Rose uses a fifteen per cent. solution, and injects fifteen drops, and Damaschino takes one of only four per cent., and injects only five drops. Of twelve cases treated by Guérin-Rose, most were cured, a few were improved, and a few were not affected at all. No unfavorable consequences were observed in any of the cases. Dr. Dureau advises that the needle be introduced deeply, so as almost to reach the nerve.—*Allg. Med. Cent. Zeit.*

SPINAL IRRITATION.

[From Dr. McCall Anderson's "Clinical Medicine."]

In the year 1828 the late Dr. Brown, of Glasgow, directed attention to a class of cases illustrative of disorder of the spinal cord, to which he gave the name of spinal irritation. This affection had previously been alluded to by Mr. Payer, of Malmesbury, in an article in the *Quarterly Journal of Science* for January, 1822, and a good many years afterward it formed the subject of important contributions to our knowledge of it as a distinct affection from the pen of the late Mr. Teale, of Leeds, and a few years later from the Messrs. Griffin, of Limerick. To these gentlemen we owe almost all that we know of it at the present day.

It is especially apt to occur in debilitated, nervous, and hysterical subjects, and, although it is sometimes met with in males, it is, *par excellence*, a disease of the female sex. This is well shown by the statistics of the Messrs. Griffin, for, of one hundred and forty-eight cases, twenty-six occurred in males, forty-nine in married-women, and seventy-three in girls. According to Radcliffe, a strain or blow upon the back is apt to prove its starting point, although I can not say that I have noticed such a connection, and it is the opinion of some that it is at times hereditary.

The true nature of this morbid state is much disputed, and as the disease is one which is seldom, if ever, fatal, it is somewhat difficult to place its pathology upon a reliable basis. According to Brown, "the immediate cause is spasm of one or other of the muscles arranged along the spine, altering the position of the vertebræ, or otherwise compressing the nerves as they issue from the spinal marrow." Teale, on the other hand, attributed it to congestion, which by continuance and repetition may so far impair the tone of the capillaries as to produce a state of actual inflammation; while Radcliffe seems of opinion that the opposite condition, namely, capillary contraction and bloodlessness, is nearer the truth. But whatever the correct interpretation may be, certain it is that the abstraction of blood by leeches or cupping-glasses, applied over the tender spine, and the application of blisters in the same

situation, that is, the usual remedies for local congestion, are the most efficacious means of cure.

The most characteristic symptom of spinal irritation is tenderness of the spine, which may implicate it in its whole length, but much more frequently at one or several parts, and the symptoms of functional derangement of internal organs, and the pain so often complained of, generally bear some relation to the seat of the tenderness. In a large proportion of cases the patient makes no complaint of uneasiness in the region of the spine, and when asked if he has any pain in the back, answers as often in the negative as in the affirmative, so that, unless this symptom is specially looked for, and the spine carefully examined, the tenderness is exceedingly apt to be overlooked. For this reason, and because there is hardly a single disease in the whole category of ailments which may not be more or less accurately simulated by it, errors of diagnosis are of every-day occurrence. The following points, all of which, with the exception of the last, perhaps, I can verify from my own experience, are specially insisted upon by the Messrs. Griffin as aids to the diagnosis:

"1. The pain or disorder of any particular organ being altogether out of proportion to the constitutional disturbance.

"2. The complaints, whatever they may be, are usually relieved by the recumbent position, always increased by lifting weights, bending, stooping, or twisting the spine; and among the poorer classes, often consequent to the labor of carrying heavy loads, as in drawing water, etc.

"3. The existence of tenderness at that part of the spine which corresponds with the disordered organ, and the increase of pain in that organ by pressure on the corresponding region of the spine.

"4. The disposition to a sudden transference of the diseased action from one organ or part to another, or the occurrence of hysterical symptoms in affections apparently acute.

"5. Perhaps we may mention the occurrence of continued fits of yawning or sneezing. They are not very common symptoms; but as scarcely ever occurring in acute or organic diseases, they may generally be considered as characteristic of nervous irritation."

EXAMINATION OF THE THROAT AND POSTERIOR NARES.

To examine the throat well, the nose should be held so as to compel breathing through the mouth. Thus the soft palate will be raised, the palatine arches widened, and the tonsils and the back of the pharynx fairly exposed. Pressing the tongue downward, provided it be done very gently, is also of advantage. Rude treatment the tongue would resist. The forefinger can be passed into the throat as low as the bottom of the cricoid cartilage, and thus search the pharynx down to the top of the esophagus, and the hyoid space (on each side) where foreign bodies are so apt to lodge. In introducing a stomach-pump, the finger should keep the instrument well

against the back of the pharynx so as to prevent its slipping into the larynx.

Put the finger into the mouth, and feel the anterior border of the coronoid process of the jaw. On the inner side of this process, between it and the tuberosity of the upper jaw, is a recess, where a deeply-seated temporal abscess might burst, or might be opened. Behind the last molar tooth of the upper jaw we can distinctly feel the hamular process of the sphenoid bone; also the lower part of the pterygoid fossa, and the internal pterygoid plate. Behind, and on the outer side of the last molar, can be felt part of the back of the antrum and of the lower part of the external pterygoid plate.

On the roof of the mouth we can feel the pulsation of the posterior palatine artery. Hemorrhage from this vessel can be arrested by plugging the orifice of the canal, which lies (not far from the surface) on the inner side of the last molar, about one-third of an inch in front of the hamular process.

When the mouth is wide open, the pterygo-maxillary ligament forms a prominent fold readily seen and felt beneath the mucous membrane, behind the last molar teeth. A little below the attachment of this ligament to the lower jaw we can easily feel the gustatory nerve, as it runs close to the bone below the last molar tooth. The exact position of the nerve can be ascertained in one's own person by the acute pain on pressure. A division of the nerve, easily effected by a small incision in the right place, gives much temporary relief in cases of advanced carcinoma of the tongue.

To feed a patient in spasmodic closure of the jaw, it is well to know that there exists behind the last molar teeth a space sufficient for the passage of a small tube.

A surgeon's finger should be familiar with the feel of the posterior nares, and of all that is within reach behind the soft palate. This is important in relation to the attachment of polypi, to plugging the nostrils, and the proper size of the plug. In the examination of this part of the back of the throat it is necessary to throw the head well back, because, in this position nearly all the pharynx in front of the basilar process comes down below the level of the hard palate, and can be seen as well as felt. But when the skull is horizontal, *i. e.*, at a right angle with the spine, the hard palate is on a level with the margin of the foramen magnum, and the parts covering the basilar process are concealed from view.

The head, then, being well back, introduce the forefinger behind the soft palate, and turn it up toward the base of the skull. You feel the strong grip of the superior constrictor. Hooking the finger well forward, you can feel the contour of the posterior nares. Their size depends upon the anterior, but rarely exceeds a small inch in the long diameter, and a small half-inch in the short. The plug for the posterior nares should not be larger than this. Their plane is not perpendicular, but slopes a little forward. You can feel the septum formed by the vomer, and also the posterior end of the inferior spongy bone in each nostril.

Before taking leave of the throat, look well at the position of the tonsils between the anterior and posterior half arches of the palate. In a healthy state they should not project beyond the level of these arches. In all operations upon the tonsils, we should remember the close proximity of the internal carotid artery to their outer side. Nothing intervenes but the pharyngeal aponeurosis, and the superior constrictor of the pharynx. Hence the rule in operating on the tonsils always to keep the point of the knife inward.

In troublesome hemorrhage from the tonsils, after an incision or removal, it is well to know that they are accessible to pressure if necessary by means of a padded stick, or even a finger.—*From Holden's Landmarks.*

CHINESE MEDICINE AND SURGERY.

A correspondent of the *New York Evening Post*, now travelling in China, gives an entertaining account of medical and surgical matters in the Celestial Empire, from which we cull a few paragraphs. The list of *materia medica* includes not a few articles which would have found favor in Europe in the olden time, though out of fashion now-a-days, as the following enumeration will show:—

The larvæ of beetles and other insects are used medicinally to give strength to feeble children; dried toads are taken to give tone to the system; caterpillar syrup is a specific for bronchitis; and for small-pox the skins of snakes and scorpions, dried and powdered, are considered efficient remedies. The horns of the rhinoceros, the bones of tigers, the paws of bears, and the wings of bats all have a place in the Chinese pharmacopia. The body of the bat eaten is said to prolong life; to partake of the white bat is believed to be to protract one's existence beyond that of the aged Methuselah. A simple remedy, containing well-known ingredients, is nothing thought of by a patient, and the doctors seem to be quite of the same mind.

Orange peel, dried, is used in enormous quantities, and seems to be considered a real panacea. Ginseng ranks next in importance, and licorice and rhubarb are highly esteemed in Chinese pharmacy. The water in which the precious metals have been hastily boiled is a popular remedy for emergencies in a household, such as sudden faintness or slight illnesses. It seems to take the place of the brandy and camphor so frequently given in foreign households, when a sudden exigency arises. The ornaments and pins, of gold and silver, which adorn a Chinese lady's head, are often brought into requisition in preparing this medicinal drink. The Chinese medical men are exceedingly given to the use of caustic medicines and plasters. The blossoms of a certain plant are sometimes placed on the skin and set fire to in order to blister the surface. In rheumatism of the joints, a thin slice of ginger-root is laid on the joint, and a piece of burning moss placed on the ginger to cause irritation of the skin.

A trifling sore is frequently so doctored with these caustics that much of the tissue is destroyed, and the patient suffers long and seriously.

Of the Celestial surgery the following account of setting a dislocated brain will suffice as a sample:—

The Chinese surgeon, although unskilled in the art of setting a broken leg, seems to be at no loss what to do in "setting the brain," as he styles the process. A Roman Catholic missionary having fallen from his horse and been taken up in a critical condition, a native doctor was summoned, who declared that the brain of the sufferer had been displaced by the fall, and must be "set." Thereupon he tied a stout cloth about the head of the priest, giving the ends of the cloth into the hands of two men, who drew the bandage as tightly as possible, while the physician beat the patient's head with a stick. This operation, although giving the poor priest's head a violent shaking and causing severe pain, proved highly successful, in the surgeon's opinion, the brain having thereby at once regained its normal position. One of the priest's ribs having been dislocated by his fall, the doctor half suffocated the poor man by fastening a handkerchief or something of the sort over his mouth and nose, doing so with the expectation that the patient, by dint of making violent and spasmodic struggles to get his breath, would cause the rib to spring of itself back into its place.

THE RESPIRATOR AS A PREVENTIVE OF COUGHS AND COLDS.

Dr. J. Milner Fothergill, of London, sends to the *Philadelphia Medical Times* a long and interesting letter on the treatment of coughs and colds. Among preventive measures he lays great stress on the respirator, which is much more commonly used abroad than here, and is undoubtedly a good thing for persons with sensitive lungs, if they cannot or will not keep their mouths shut when out of doors in cold weather. On this subject Dr. Fothergill says:—

The mucous rheum which calls out the morning cough is due to the changes of temperature to which the lining membrane of the air-passages is exposed in cold weather. People pass rapidly from in-door temperatures of 60° Fahr. to out-door temperatures varying from 40° to 32°, and far below that very often, and then changes in the vascular supply of the mucous membrane of the air-passages are set up. If everybody at all times only breathed through the nose, the inspired air would be warmed by passing over the coils of blood-heated plates which exist in the nose for that purpose, and would not affect the air-passages placed behind the turbinated bones. But such is not the case; they probably commence to talk, and in doing so draw in by the mouth cold air, which, on mixing with the residual air in the chest, lowers its temperature, and then a fluxionary hyperæmia follows, and after it, in its train, a mu-

cous rheum. The best plan for persons who thus catch their winter cough to adopt is to keep their mouths closed; but then humanity is not generally prepared for such self-denial, and the respirator suggests itself as the agent required. A respirator is not an ornamental thing, and its appearance is not in its favor. Its use subjects you to the remarks of inconsiderate and unreflecting friends and acquaintances, who point significantly to the unsightly contrivance, and express their regret that you should be compelled to wear such a thing; and the insurance agent, when you call to pay the premium on your policy, looks excited and nervous. Having worn a respirator for eight winters now, and knowing how little I have been troubled with bronchitis since, which previous to then for some years had made winter a very uncomfortable season, I am very little perturbed by such incidents, and reply that "I don't wear a respirator because I am ill, but because I don't wish to be ill." And a wonderfully comfortable thing it is! It keeps the cold wind from blowing into the mouth when facing it; and surely it is as natural to cover the orifice of the mouth in winter as it is to shut the front door to prevent a cold draught pervading the house. Ladies who take carriage-drives wrapped in furs copiously and provided with foot-warmers in their carriages and flasks of hot water in their muffs often catch cold when out. If they would further conserve and economize their body heat by the use of respirators, which take up some of the heat of the warm expired air and give it off again to the cold inspired air, then they would not only be more comfortable, but they would escape many a catarrh and much coughing. Whether it is inconsistent with the interests of the profession thus to instruct the public how to keep themselves well, or not, may not be affirmed. The respirator in some form has a great future before it.

TABLE SALT IN MILK FOR CHILDREN.

Dr. Q. C. Smith, in the *Pacific Medical Journal*, gives the following useful hint, which, by the way, is confirmed by other excellent authority: "When cow's milk is found to disagree with hand-fed babies or small children it may in many cases be rendered entirely wholesome to them by adding to it a small portion of table salt, just enough to be perceptible to the taste. I have for years directed the practice of this expedient among our people, and know it to be of real value."

TO STOP THE NOSE-BLEED.

A recent writer says that the best remedy for bleeding at the nose consists in the vigorous motion of the jaws, as in the act of mastication. In the case of a child a wad of paper should be placed in its mouth, and the child should be instructed to chew it hard.

INTESTINAL OBSTRUCTION.

Its Diagnosis.—When a *child* becomes suddenly the subject of symptoms of bowel obstruction it is probably either intussusception or peritonitis. When an *elderly person* is the patient, the diagnosis will generally rest between impaction of intestinal contents and malignant disease. In *middle age* the causes of obstruction may be various; but intussusception and malignant disease, both of them common at the extremes, are now very unusual. Intussusceptious cases may be known by the frequent straining, the passage of blood and mucus, the incompleteness of the constipation and the discovery of a sausage-like tumor, either by examination *per anum* or through the abdominal walls. In intussusception the parietes usually remain lax, and there being but little tympanites it is almost always possible without much difficulty to discover the lump by manipulation under ether. Malignant stricture may be suspected, when in an old person continued abdominal uneasiness and repeated attacks of temporary constipation have preceded the illness. It is also to be noted that the constipation is often not complete. If a tumor be present and pressing on the bowel it ought to be discoverable by palpitation under ether through the abdominal walls, or by the examination by the anus or vagina, great care being taken not to be misled by scybalous masses. If repeated attacks of dangerous obstruction have occurred with long intervals of perfect health, it may be suspected that the patient is the subject of a congenital diverticulum, or has bands of adhesion, or that some part of the intestine is pouched and liable to twist. If, in the early part of a case, the abdomen becomes distended and hard, it is almost certain that there is peritonitis. If the intestines continue to roll about visibly, it is almost certain that there is no peritonitis. This symptom occurs chiefly in emaciated subjects, with obstruction in the colon of long duration. The tendency to vomit will usually be relative with three conditions and proportionate to them. These are, (1) the nearness of the impediment to the stomach; (2) the tightness of the constriction, and (3) the persistence or otherwise with which food and medicine have been given by the mouth. In cases of obstruction in the colon or rectum, sickness is often wholly absent. Violent retching and bile vomiting are often more troublesome in cases of gall stones or renal calculus simulating obstruction, than in true conditions of the latter. Fecal vomiting can occur only when the obstruction is moderately low down. If it happens early in the case, it is a most serious symptom, as implying tightness of constriction. The introduction of the hand into the rectum, as recommended by Simon, of Heidelberg, may often furnish useful information.

Its Treatment.—(1) In all early stages, and in all acute cases, abstain entirely from giving either food or medicine by the mouth. (2) Use anæsthetics promptly. Under their full influence examine the abdomen and rectum carefully before tympanites has concealed the conditions. Administer large enemata in the inverted position of the body. If

advisable, practice abdominal taxis. If you do not at first succeed, do it repeatedly. (3) Copious enemata, aided perhaps by the long tube, are advisable in almost all cases, and in most should be frequently repeated. (4) Fluid injections may be sometimes replaced by insufflation of air in cases of invagination, since air finds its way upward better and is more easily retained. It is, however, somewhat dangerous, and has perhaps no advantages over injections with the trunk inverted. (5) Insufflation is to be avoided in all cases of suspected stricture, since the air may be forced above the stricture and there retained. (6) Saline laxatives are admissible in certain cases where impaction of feces is suspected, and in cases of stricture where fluidity of feces is advisable. (7) Opium must be used in proportion to the pain which the patient suffers. It should be administered hypodermically or by the rectum, and should be combined with belladonna. If there be not much pain or shock it is better avoided, since it increases constipation and may mask the symptoms. (8) A full dose of opium, administered hypodermically, will put a patient in a favorable condition for bearing a prolonged examination under ether and attempts at abdominal taxis. (9) In cases of uncertain diagnosis it is better to trust to the chance of spontaneous cure, or relief by repeated abdominal taxis, than to resort to exploratory operation; or in desperate cases iliac enterotomy should be done. Operations for the formation of artificial anus in the right or left loin may be resorted to whenever the diagnosis of incurable obstructive disease in the lower bowel is made. (10) The operation for the formation of an artificial anus through the anterior part of the abdominal wall and into the small intestines should be resorted to only in certain cases of insuperable obstruction in which the seat of disease is believed to be above the cecum. (11) In all cases in which the precise seat of the disease is doubtful, but the large intestine is suspected, the right loin should be preferred. If the colon here be found to be empty, the peritoneum may be cautiously opened and a coil of distended small intestine brought into the wound. (12) Cases of intestinal obstruction are strictly surgical, and not medical cases.—*Dr. Jonathan Hutchinson, British Medical Journal.*

TREATMENT OF OBESITY BY ARSENIC.

Dr. J. T. Whittaker states that he has employed arsenic with success in the treatment of four cases of obesity. One case was so severe that the patient fainted on the slightest movement; he had gained forty pounds in three months. He had no valvular lesions and had never had rheumatism. After the failure of all other methods of treatment, he was put on five drops of Fowler's solution three times a day. In two months he was restored to health, could walk well, and had lost much of his *embonpoint*. In the three other cases, two of which were complicated with asthma, the effect was also decisive but less rapid.—*Cincinnati Lancet.*

SOME REMEDIES TO EASE THE PAIN OF UTERINE CANCER.

Dr. Aus-Lawrence has compared the effect of various remedies easing the pain of uterine cancer.

The result of his investigations showed that ergot given in 30 minim doses every 6 hours relieved the pain better than any of the other ordinary medicines. This remedy acts probably by diminishing the hyperæmia of the uterus.

The hydrate of croton chloral is also of good effect in these cases, but it is of use more particularly for the radiating pains which are present in the side, thighs and back.

As a local remedy the author gives the preference to carbolic acid, of which he applies a concentrated solution by means of a wad of lint upon the diseased part. In addition to that the patient takes night and morning an injection of carbolyzed glycerine, and small blisters applied to the lumbar region are sometimes of service. These may be dressed by the application of an ointment containing a little morphine.—*Journal de Therapeutique.—Lyon Medicale.*

POST-PARTUM HEMORRHAGE.

Mr. Tyson, F.R.C.S., read a paper before the Kent Medical Society, detailing three cases of post-partum hemorrhage, in each of which perchloride of iron was injected into the uterus with good effect. The cases were adherent placenta, hour-glass contraction, and the last mainly one of inertia. In all, ergot, cold external and internal pressure were fairly tried. The strength of the iron solution was one of the strong liquor of the B. P. to ten of water. Stress was laid on the importance of syringing out the uterus for a few days after the labor; mention was likewise made of the good effect of the subcutaneous injection of the liquid extract of ergot, being apparently as useful, although a large quantity was required, as ergotin—the latter remark referring to those cases in which the stomach rejects every thing put into it.—*British Medical Journal.*

THE URINE OF THE INSANE.

M. Albert Robin (Société de Biologie, June 24) had occasion to examine the urine of a madman who died at the Hospital Beaujon, and communicates the very interesting results of his researches. The quantity of the urine was diminished to three hundred grams in twenty-four hours; the specific gravity was 1030; the reaction acid, remaining so after exposure to the air for eight days. The amount of solids was twenty-five grams in twenty-four hours, that of the urea only 10.22 grams, but uric acid, on the contrary, was present in large proportions. The chlorides were diminished, the phosphates nor-

mal; sugar and albumen were not present. In the sediment, after evaporation, he found crystals of the hippurate of calcium, margaric acid, leucine, and an enormous quantity of uric acid. Many bacteria of a special nature were found on microscopical examination. M. Robin asks whether it might be possible to inoculate madness by means of urine.—*British Medical Journal.*

ON THE EMPLOYMENT OF LISTER'S METHOD IN THE TREATMENT OF BURNS.

The burned part is to be carefully disinfected and then covered with a piece of linen spread with Lister's boracic acid. Then follows the envelopment with carbolyzed gauze or salicylic cotton. According to H. Busch of Bonn, under this dressing the necrosed parts are separated, move gradually and easily, and the granulations never become exuberant. The most striking results, however, are seen in the cicatrix. Instead of the usual extensive cicatricial bridges which project above the surface and exert traction on the neighboring tissues, an almost smooth cicatrix forms, which remains elastic and extensive and does not cause contracture.—*Centralblatt f. d. Med. Wissen*

DR. SEATON ON RE-VACCINATION.

Generally speaking, the best time of life for re-vaccination is about the time when growth is completing itself, say from fifteen to eighteen years of age; and persons in that period of life ought not to delay their re-vaccination till times when there shall be a special alarm of small-pox. We are strongly of opinion that there would be a great deal more re-vaccination if the family medical man always made a point of drawing the attention of parents to the necessity of their adult children being re-vaccinated. We feel certain that as a rule medical men neglect to do this, little thinking how, by insisting on the repetition of the operation, they have it in their power to starve, and therefore to weaken the force of any future epidemic of small-pox.—*Report to the Local Gov. Board.*

FOR MOSQUITO BITES.

Rub on the bite a little soap (toilet), then allow a stream of cold water to run upon the part for three or four minutes. The itching is at once relieved and no further annoyance results.—C. J. S. DIGGES, in *Lancet.*

CHRONIC VARICOSE ULCERS.

Wash with an eight per cent. sol. of zinc chloride, then cover with wet borax lint, and over the latter spread gutta-percha tissues. When healthy granulations appear, cover the surface with dry borax lint, without the impermeable covering. This is said to give excellent results.—*N. Y. Medical Record.*

SCLEROTOMY IN GLAUCOMA.

Professor L. Mauthner, of Vienna, (in the *Wiener Medizin Wochenschrift*, for July, 1877,) has a long communication on the advantage of sclerotomy in glaucoma over iridectomy. He considers that the essential part of the operation of iridectomy is the division of the sclerotic at the margin of the cornea, and that the success of the operation depends upon the extent of the sclerotic divided; he thinks, therefore, that the above operation is more certain than iridectomy, as the extent of the scleral wound is greater. He relates that he has found many cases in which the large opening after iridectomy interferes seriously with the functions of the eye, and that he finds the removal of a segment of the iris to be quite an unnecessary proceeding; also, that in cases in which the segment of the iris has been incompletely removed, the tension has been reduced as well as in those in which no such failure has occurred; and that, when sclerotomy has been performed in the manner in which he describes the operation, the results have been more successful than those after Von Graefe's operation.

The following are his directions for the performance of the operation: Before the operation, a drop of a one per cent. solution of the sulphate of eserine is to be applied, when the pupil will undergo contraction, unless there is atrophy of the iris. If there be atrophy, he remarks that it is exceedingly difficult to avoid prolapse. In adults the operation should be performed without anæsthetics. The division of the sclerotic should be performed upwards; in case it is necessary to perform iridectomy on account of accidental prolapse of the iris, this is the most favorable position to do so. A Von Graefe's cataract knife is now to be entered a millimeter behind the edge of the cornea, and carried through as if to form a scleral flap by Wecker's method. After transfixion, the operation is completed by causing the knife to cut its way out very slowly, so that the aqueous humor may escape very gradually; it is in this manner that the prolapse of the iris is prevented the flap is not, however, to be completed, but a small bridge is to be left at its upper part. The knife should not be withdrawn from the eye until just as the last of the aqueous humor has escaped; as it is withdrawn, its flat side is very gently pressed upon the iris. A drop of the solution of eserine is then applied, and the eye is dressed with the usual pad and bandage. This dressing is to be renewed after a few hours, and another drop of the solution of eserine applied. The patient should be kept in bed for forty-eight hours. If the iris prolapse, it may be returned, or the operation of iridectomy performed. He also hopes for good results from this operation in hydrophthalmus.—*London Med. Record.*

ON THE USE OF ARSENIC AS A BLOOD AND CARDIAC TONIC.

In a communication to the *British Medical Journal*, Dr. Loekie calls attention to the remarkable

results obtained by him in the administration of arsenic in certain cases of anæmia, and those cases in which iron and good food had failed to produce any benefit. His attention was first directed to the power of arsenic in this respect by a paper published by Dr. Byrom Bramwell, of Newcastle, in which he narrated several cases of essential or progressive pernicious anæmia, where remarkable benefit accrued from the administration of this drug. Whether it really has the power of curing this disease—a disease which has hitherto baffled the resources of our art, and the good results apparently promised by phosphorus in the hands of Dr. Broadbent not having been obtained, to any extent at all events, by other observers—remains for the future to determine. Certain it is that in cases of anæmia approaching in gravity the so-called essential or pernicious anæmia it is capable of producing great benefit. In support of this statement Dr. Loekie reports several striking cases.

MURIATE OF CALCIUM AS A THERAPEUTIC AGENT.

Dr. Robert Bell, (*London Lancet*), in speaking of this drug says, "Chloride of calcium possesses a most wonderful power in controlling, if not actually curing, many forms of tubercular disease. In my experience I have found no remedy on which so much reliance can be placed in tuberculosis as on this salt; more especially, however, this remark applies to the wasting diseases of children. It has been most extensively used by me during the past four years, and with the most gratifying results. Having prescribed it in every form of tubercular disease that has come before me during this period, perhaps a short account of my observations on the effect of the drug may not be uninteresting. The conditions which indicate the probable usefulness of the salt in children are, first of all, a falling-off in flesh. The child may take his food heartily enough—nay, his appetite may be better than usual—yet he becomes more attenuated every day, he is languid, oft-times sleepless, and the pupils are always very much dilated; when sleep does come on, the little patient frequently starts up in a fright, grinds his teeth, and convulsive twitching of the muscular system will often be observed,—these symptoms being evidently due to a large amount of undigested food in the lower bowel; oft-times there is a craving for stimulants, and a most extraordinary liking for potatoes and other articles of diet containing a large amount of starch. If the mother is questioned, the remark will often be made that the child takes his food so well as to make it quite beyond her power to understand how he does not thrive, but, on the contrary, is falling off every day. When we come to examine the patient, the face may appear to be pretty plump, but the arms and legs are miserably thin, soft and flabby, while the abdomen is greatly distended, having the cutaneous veins very much engorged. The evacuations should always be examined, when it will be observed that they are much

greater in quantity than they ought to be, that undigested food can be largely traced in them, and that their fetor is excessive. Such a state of things distinctly points to great defect in the powers of digestion and assimilation. In fact, none of the food appears to have entered the child as nourishment, it having seemed to pass away in a state of putrid fermentation, while the body has been preying on its own tissues. It is in circumstances such as these that the beneficial effects of the muriate of calcium can be appreciated. Its powers in arresting such symptoms, in my opinion, are superior to cod-liver oil or iron; and, what is of no little advantage, very young children soon get to take it quite readily. Of course, when one is prescribing in disease of this kind, it is absolutely necessary to observe strict dietetic rules. In addition to the internal remedies, it will be of immense service if the abdomen of the patient is gently rubbed, night and morning, with olive oil, and afterwards a flannel bandage applied. With reference to diet, I insist upon a large quantity of milk, and the avoidance of starchy food and sweets. The medicine requires to be perseveringly used. Let me urge on my professional brethren to give it a lengthened trial, and not to be discouraged by an apparent failure. Muriate of calcium can do no possible injury to the economy, while in properly selected cases it will be of incalculable service." The dose for the adult of muriate of calcium is twenty grains, repeated three times a day after meals; diminish the dose to suit the age of the child; from three to five grains may be given to an infant.

TREATMENT OF ASTHMA BY IODIDE-OF-POTASSIUM SPRAY.

Dr. Evrard, of Orsennes, has obtained very satisfactory results, in a severe case of asthma, from the use of a spray of iodide of potassium. The patient, a man thirty years of age, had suffered for eight months from daily attacks of asthma, and had also been subject to chronic bronchitis for five years. At the time the treatment was begun he had three or four attacks a day, and was reduced to a pitiable condition. After assiduous use of the spray for eight days the asthmatic attacks had almost entirely ceased. Eighteen months have elapsed since then, but the patient continues to use the spray, and the attacks have not recurred. The strength of the solution used was one to twenty. The periods of inhalation were short, but frequently repeated.—*Boston Jour. of Chem.*

THUMB-SUCKING AND IRREGULAR TEETH.

Dr. Chandler, in a paper published in the *Boston Journal*, August 15th, states that there is no cause so productive of malformation of the bones of the mouth and irregularity of the teeth as the habit of thumb-sucking during infancy, the different positions of the thumb giving rise to different kinds of deformity.

EPILEPSY.

Dr. Mordough, of Flatbush, highly recommends the hypodermic use of *veratrum viride* in recurring epileptic attacks; that is, in a series of attacks with an interval of only a few moments. His formula is: Morph. sulph., gr. ijss; tinct. verat. verid., aqua, a a $\frac{3}{4}$ ss. M. S. Use twenty minims of the solution, representing ten minims of the U. S. P. tinct., and about a tenth of a grain of morphia.—*Phila. Drug. and Chem.*

THE PITH OF DRIED CORN STALK AS A UTERINE TENT.

W. T. Goldsmith, M.D. (*Southern Medical Record*, September 20th, 1878), says that he has used the dried pith of the corn stalk as a uterine tent for the last seven years, and finds them (the tents) to possess decided advantages over sponge tents. During the seven years the doctor has used these tents he has not had a single accident attributable to their use.

The tents are easily shaped of the proper size to which the dilatation is to be carried, and then the tent can easily be compressed to one-fifth its original size. The tent can be inserted without exposure of the patient, but not so readily.

Among the advantages of the corn-pith tent are the following:

It dilates effectually, but not too rapidly.

It is smooth, soft, and can be removed without force.

It produces no lacerations, abrasions, or irritation of the mucous membrane.

It can be medicated with any substance as easily as the sponge or cloth tent.

It is of vegetable origin, and hence does not become putrid and poisonous to the patient.

It may be retained non-compressed for days without injurious results, if no pain occurs.

A number of small tents, filling up the cervical canal, may be used for more rapid expansion.

It can be prepared in a few minutes, of any desired curve, size and length.

Any degree of compression may be given to it, or it may be used without compression.

It may be perforated like the sea-tangle, and its power of absorption increased by pricking its surface.

It will not break upon introduction in the cervical canal, and can be bent without breaking on removal.

OXIDE OF ZINC IN DIARRHŒA.

Dr. Jacquier, in the service of Dr. Bonamy, at Nantes, has noted the excellent effects of the following formula: Zinc oxide, gr. liv.; soda bicarbonate, gr. vijss. M. Divid. in pulv. iv. Sig.—One every six hours. In all cases the zinc produced rapid cures, even in chronic cases.

IODOFORM IN EYE DISEASES.

Mr. Patrick J. Hayes, of Dublin, calls attention (*Med. Times & Gaz.*) to the value of iodoform as a therapeutic agent in the treatment of certain sub-acute and chronic diseases affecting the eyes and eyelids.

Many practitioners are of course aware that for a considerable time iodoform has been used as an application in cases of trachoma or granular lids, and reports have been published, in America and elsewhere, illustrative of the good results which frequently ensue upon its employment. Mr. Hayes has not, however, seen any recommendation of it for such cases as phlyctenular and pustular ophthalmia, corneal ulceration, obstinate keratitis, ciliary blepharitis, etc., hence, as he has found it to benefit several patients so affected, he ventures to invite for it a trial at the hands of his *confrères*. With respect to the method of application, it is his custom to crush the crystals until they become reduced to a very fine powder, and then, with a delicate camel's hair pencil, the powder is freely dusted over the affected surface. For use upon the eyelids such an ointment as the following will be found convenient: Iodoform 1 part, vaseline 4 parts; mix.

Iodoform, when brought into contact with the eye does not give rise to pain, and children who have once experienced its effect will readily tolerate subsequent applications.

Mr. Hayes adds that it is not suitable for and ought not to be used during the early or acute stage of conjunctivitis.

TREATMENT OF OBSTINATE HICCOUGH BY
PILOCARPINE.

Dr. ORTILLE, of Lille (*Bull. Général de Thérap.* 1878), gives an account of a case of obstinate hiccough in which, after trying all the usual remedies, he had recourse to electricity. For a few hours the application appeared to prove successful; but the hiccough returned. Remembering what he had read of the action of pilocarpine upon the phrenic nerves and of the vomiting which often follows its use, he injected two-fifths of a grain of pilocarpine under the skin. The effect was almost instantaneous. A quarter of an hour after the injection the patient was covered with sweat, salivation was established, and the hiccough had definitely ceased.—*London Med. Record*, Oct. 15, 1878.

REMOVAL OF MOLES UPON THE FACE.

Dr. Lilwlen Thomas advises (*British Medical Journal*) the use of the acid nitrate of mercury for the removal of moles upon the face. No pain attends the application, if care be taken to prevent touching the surrounding skin. The growth gradually shrivels away; the slough falls off in about a week, leaving only a very faint depression like a very indistinct small-pox mark.

THE CANADA MEDICAL RECORD,
A Monthly Journal of Medicine and Pharmacy.

EDITOR:

FRANCIS W. CAMPBELL, M.A., M.D. L.R.C.P., LOND.
SUBSCRIPTION TWO DOLLARS PER ANNUM.*All communications and Exchanges must be addressed to the Editor, Drawer 356, Post Office, Montreal.*

MONTREAL, JANUARY, 1878.

TO SUBSCRIBERS.

Please look at your address labels. If you are in arrears, and the dates will show, please remit at once.

THE SPECIMEN COPY NUISANCE.

We had thought that the remarks which appeared about a year ago in a number of medical journals throughout the country, our own included, had struck a death-blow at this contemptible swindle. It seemed so, for at least a time we did not receive the usual postal card, written in the usual complimentary style; but a revival is again coming around; if crushed they have not been killed. During the past month we have received six such requests for specimen copies, and, what is somewhat singular, is the fact that two of these have been from places where about a year ago we received similar requests. The handwriting of the cards is identical with that received a year or so ago, although the names signed are different. *We send specimen copies only on receipt of twenty cents.*

CANADA VINE GROWERS' ASSOCIATION.

Messrs. McGibbon & Baird, of Montreal, keep the Wines of Canada Vine Growers' Association for sale, either in wood or bottle.

WOMEN'S HOSPITAL, MONTREAL.

We direct the attention of our readers to the advertisement of this institution, which has now been in operation some five years. It contains a general department for diseases peculiar to women, and a lying-in department, where patients can receive every attention. Poor patients are received from a distance, at a purely nominal figure, while private rooms and attendance can be had at rates according to accommodation and attendance. Applications to directed to the Matron.

PERSONAL.

Dr. George F. Slack has resigned his position as one of the attending physicians to the Montreal Dispensary.

Dr. Alexander Blackader has been elected as one of the attending physicians to the Montreal Dispensary, in place of Dr. Slack resigned.

Dr. Bergin, M.P. for Cornwall, Ont., delivered an address before the St. Patrick's Society of Montreal. The address was worthy of the doctor's reputation as an orator, and was patriotic both as regards Ireland and Canada.

Dr. A. Laphorn Smith, (M.D., Laval University), has commenced practice in Montreal. Dr. Smith is a son of the respected Deputy Minister of Marine and Fisheries.

Dr. Tunstall, (M.D., McGill University, 1875, and gold medallist), has commenced practice in Montreal.

OBITUARY.

Among our obituary notices will be found the name of Dr. Herbert C. Fuller, who died in Montreal on the 10th day of January. Dr. Fuller was a brother of Dr. William Fuller, who, for many years, was so well and so favorably known in our city, and who only left us a few months ago to take up his abode in the West. Dr. Herbert C. Fuller began his studies at McGill University, but passed his last two years at Bishop's University, at which he graduated in the Spring of 1878, having during his attendance at this school filled most acceptably the position of Curator of the Museum. He was distinguished for his love of, and special adaptedness for, the study of Anatomy, in which branch of medical science he promised to take a most distinguished position had his life been spared. A year before he graduated, however, phthisis began to develop itself and, although he manfully fought against his malady, he finally succumbed. His fellow-students will mourn his early decease.

Dr. Thomas Edward Hayes, whose name is also among our obituary notices, died in Ireland in November. He was possessed of several Irish medical qualifications, occupying for some seven or eight years the position of Resident Surgeon to the Richmond Lunatic Asylum, Dublin. He came to Canada some three years

ago, and, after attending Bishop's University for a session, graduated in the spring of 1877. Although, from his physical conformation, almost the last person in whom the development of phthisical disease would be looked for, he was predisposed to it from his family history. About eighteen months ago he was prostrated by an attack of hæmoptysis, and the disease made rapid progress. Last summer he left his family in Montreal and took a trip across the Atlantic, in the hope of receiving benefit. He had hardly reached the other side when he was again prostrated, and, although he rallied to some extent, he was never able to re-cross the Atlantic. Although he died away from his family, his last moments were soothed by the kind attention and warm devotion of a sister.

EXTRACT OF MALT.

Testimony as to the value of this medicinal agent is being steadily and increasingly brought to our notice in the European and American press. Niemeyer, Oppolzer, Werber, Bock, Hoppe-Seyler, Heimerdinger, Juergensen, Schroeder and Ziemssen, in Germany; Trousseau, Gosselin, Hardy, Mauduit and Pillois in France; Ramaglia, Testa and Taglia, in Italy; Aitken, Anstie, Richardson, Chambers and Thompson, in England, are among the foreign writers who speak in favorable terms of its use. In America the testimony is to the same effect. In Canada, where its introduction is of comparatively recent date, it has grown so rapidly in favor that there are few practitioners—in this vicinity at least—who do not regularly prescribe it. The range of its application is so wide that abundant opportunities present themselves for every one to determine its merits. It is officinal in Germany, where it is fixed in the front rank of therapeutic agents. Dr. Niemeyer says: "The class of diseases in which the chief, if indeed not the only, task of the physician is to maintain or restore the strength and nutrition of the patient is very large. For several years past, to meet these indications, instead of prescribing Cod Liver Oil, which I was formerly in the habit of doing, I have employed, almost exclusively, Malt Extract, and with the very best effect." According to Prof. Douglas, 1000 parts of the Trommer Extract of Malt (which is the standard American preparation) contains: Malt sugar, 46.1; dextrine, hop bitter, extractive matter, 23.6; dias-

tase, 2.469; ash-phosphates, 1.712; alkalis, .377; water, 25.7. In comparing the above analysis with that of the Extract of Malt of the German pharmacopœia, as given by Hager, he finds it to substantially agree with that article. Malt Extract, with its combinations, has been recommended and deserves a trial in the following diseases: anæmia, chlorosis, marasmus, dyspepsia, neuralgia, insomnia, pulmonary and bronchial affections, dysentery, constipation, scrofula, convalescence from exhausting diseases, etc. We give the formulæ of the various combinations prepared by the Trommer Extract of Malt Company, whose high standing is sufficient endorsement of their guarantee as to the prime quality and absolute reliability of their preparations:—

- Ext. of Malt with Hops, (Plain.)
 Each Tablespoonful contains—
 Hops..... 6 grains.
- Ext. of Malt (Ferrated,)
 Each Tablespoonful contains—
 Pyrophosphate of Iron..... 4 grains.
- Ext. of Malt with Cod Liver Oil,
 Each Tablespoonful contains—
 Extract of Malt..... } Equal parts.
 Cod Liver Oil..... }
- Ext. of Malt with Cod Liver Oil and Iodide of Iron.
 Each Tablespoonful contains—
 Extract of Malt..... } Equal parts.
 Cod Liver Oil..... }
 Iodide of Iron..... 1 grain.
- Ext. of Malt with Cod Liver Oil and Phosphorus.
 Each Tablespoonful contains—
 Extract of Malt..... } Equal parts.
 Cod Liver Oil..... }
 Phosphorus..... 1-100 grain.
- Ext. of Malt with Pepsin,
 Each Tablespoonful contains—
 Pepsin..... 6½ grains.
 Hydrochloric Acid..... 2½ minims.
- Ext. of Malt with Alteratives.
 Each Tablespoonful contains—
 Chloride of Calcium..... 10 grains.
 " " Potassium..... 2 " "
 " " Magnesium..... 5 " "
 Iodide " Calcium..... 1 " "
 " " Iron..... 1 " "
 Bromide " Sodium..... 2 " "
- Ext. of Malt with Hypophosphites.
 Each Tablespoonful contains—
 Hypophosphite of Lime..... 2 grains.
 " " Soda..... 1½ " "
 " " Potassa..... 1 " "
 " " Iron..... 1 " "
- Ext. of Malt with Citrate of Iron and Quinia.
 Each Tablespoonful contains—
 Citrate of Iron and Quinia..... 4 grains.
- Ext. of Malt with Iodides.
 Each Tablespoonful contains—
 Iodide of Manganese..... 1 grain.
 " " Iron..... 1 " "

Mr. Gibson, agent for the Trommer Extract of Malt Company, is at present visiting the Physicians in the cities of this Province, and we have no doubt will be cordially received. He is desirous of securing reports from physicians of their experience in the use of these preparations, and requests us to say that such courtesy would be very highly es-

teemed. Address: P. O. Box 724, Montreal. He will also be glad to answer any enquiries, and to furnish samples on application.

CURRENT LITERATURE.

New Books published in December, 1878.

MEDICINE, SURGERY.

- Posture, The Influence of, on Women in Gynecic and Obstetric Practice J. H. Aveling, M.D. Ill. 8vo, 182 pp., \$2. *Lindsay & Blakiston.*
- Progressive Locomotor Ataxia, Diagnosis of. E. C. Seguin, M.D. 8vo, 25 pp., sewed, 25c. *G. P. Putnam's Sons.*
- Pulmonary Consumption, The Treatment of, by Hygiene, Climate, and Medicine. James Henry Bennet, M.D. Third London ed. 8vo, 286 pp., \$2.50. *Lindsay & Blakiston.*
- Section-Cutting. A Guide to the Mounting, etc., of Sections for the Microscope. Dr. Sylvester Marsh. 12mo, 87 pp., 80c. *Lindsay & Blakiston.*

Commencing with the first of 1879, the *Archives of Dermatology* will be republished by J. B. Lippincott & Co., of Philadelphia. The editorship will be unaltered, but we understand that the journal will be enlarged, and renewed efforts made in every direction to establish its growing reputation.

Amongst the most attractive presentation books recently issued may be classed those of the series of Illustrated Hymns in course of publication by the well-known Boston publishers, Messrs. Lee & Shepard. We have to acknowledge receipt of two of these, "Nearer my God to Thee," and "Rock of Ages." Generally esteemed amongst the brightest gems of Christian harmony, these exquisite hymns assume new attractions when accompanied, as they are, by illustrations which, to quote from a contemporary, "breathe a spirit of prayer." For sale by Dawson Bros.

MEDICAL ALUMNI ASSOCIATION OF THE UNIVERSITY OF BISHOP'S COLLEGE.

At the last regular meeting, held January 19th, Mr. Nelson read a paper on "Antiseptic Surgery." At the next meeting, to be held February 3rd, Mr. Houston has promised to give a paper on "Gonorrhœal Rheumatism," and Dr.

Wolfred Nelson one on "Purpura Hemorrhagica." The following officers were elected for the ensuing year: President, Dr. Wm. Macdonald, Montreal, re-elected; 1st Vice-President Dr. Wolfred Nelson, Montreal; 2nd Vice-President, Dr. J. T. Davis, Amsterdam, British Guiana; 3rd Vice-President, Dr. Wm. Young, Hong Kong, China; 4th Vice-President, Dr. Lanouette, Gentilly, Que., re-elected. Council, Dr. Graveley, Cornwall, Ont.; Dr. Costigan, Indianapolis, Ind., U. S., and Dr. A. Kerry, Montreal. Honorary Treasurer, Dr. Hart, Bedford, Que., re-elected. Secretary, Dr. C. A. Wood, Montreal.

It was moved and seconded, and unanimously resolved that, "having learned with the deepest regret of the death of three members of this Association, viz., Dr. H. N. Curtis, of Dunham, Que., Dr. T. E. Hayes, of Montreal, and Dr. H. C. Fuller, of Point St. Charles, we desire to place on record our deep sense of the loss that we, and the profession generally, have sustained thereby, and to express our heartfelt sympathy with the bereaved families; and be it further resolved, that a copy of this resolution be forwarded to the wives of the deceased, and to the public press.

C. A. WOOD, M.D.,
Secretary.

LUNATIC ASYLUMS IN THE PROVINCE OF QUEBEC.

To the Editor of THE CANADA MEDICAL RECORD.

DEAR SIR,—Your readers being very interested parties as to the mode of procedure to obtain orders for the admission of patients into either of these Asylums, I beg to inform them that, by virtue of an Order in Council, passed in the month of November, 1878, at the suggestion of the Honorable Provincial Secretary, Mr. Marchand, under *no circumstances whatever* can any *non-paying* patient be admitted into either of these asylums without a Government order, and this order can *only* be obtained by making an application for it to the Honorable Provincial Secretary, Quebec. When application is made to him, the applicant at once receives all necessary information.

Truly yours,

H. HOWARD, M.D.,
Government Medical Attendant, Lunatic Asylum,
Longue Point, (P. Q.)

Montreal, 26 Berri Street,
December 24, 1878.

CURIOUS, IF TRUE.

The Chicago *Medical Times* (Eclectic) reports a marvelous case of a woman who lived four years and three months without the least discharge from the bowels. The urine was evacuated by the catheter, but sometimes only once in three weeks. She took nourishment, but vomited afterward. No post-mortem.

PHTHISIS IN AUSTRALIA.

A valuable report has been issued by a committee of the Medical Society of Victoria. It winds up with the following conclusions, based upon carefully collated data.

1st. The mortality from phthisis in Victoria is little more than half of that in England.

2nd. The rate of mortality from phthisis in Victoria has been perceptibly less of late years.

3rd. That rate is especially low among persons under 15 or 20 years of age, and has been very greatly reduced between 1861 and 1871.

4th. The reduction of the mortality among young persons is to be explained by a comparative immunity among those born in the colony.

5th. The apparent increase of mortality among young adults is due to the influx of phthisical persons from abroad.

6th. The uniformity in the rate of mortality over the whole colony for a good many years is owing to certain insanitary conditions operating especially in Melbourne, since for the rest of the colony the rate was reduced by about one-third between 1861 and 1871.

BIRTHS.

In Barrie, on the 18th December, the wife of Dr. Oliver of a son.

At Galt, on the 22nd November, the wife of Dr. Sylvester of a daughter.

At Toronto, on the 30th November, the wife of I. E. Cameron, M.B., of a son.

At Hawksville, on the 12th December, the wife of Dr. T. W. Vardon of a daughter.

At Montreal, on the 21st of January, the wife of W. A. Molson, M.D., of a daughter.

DIED.

At Montreal, on the 10th of January, Herbert Cooper Fuller, C.M., M.D.

At Annagurra House, Ballinlanders, Knocklong, near Dublin, Ireland, on the 29th November, 1878, Thomas Edward Hayes, C.M., M.D., of Montreal, aged 40.

Pharmaceutical Department.

A. H. KOLLMYER, M.A., M.D., Editor.

MONTREAL, Jan. 16, 1879.

To the Editor MEDICAL RECORD.

May I draw your attention to the fact that, notwithstanding the British Pharmacopœia is the sole authority in this Dominion for making tinctures, extracts, pills and all other pharmaceutical preparations, the students and graduates of the French School of Medicine in Montreal do not seem to know the book, and many of them (most of them) have never seen it. This seems very strange, and is a great injustice done to these students, for how can they intelligently prescribe medicine if they do not know the formula by which it is made? A physician, graduate of this school, who keeps a drug store, applied to me for a preparation, saying he could not find mention of it any where. I asked him if he had looked into the British Pharmacopœia, and he admitted *he did not possess the book*, but had referred to the U. S. Dispensatory, 13th edition. and to the Matière Medicale des Sœurs de la Providence. Now the "additions" to the British Pharmacopœia, published since the 13th edition of the U. S. Dispensatory and the Nuns' book, *he had never heard of*. Now, sir, I am quite willing to grant a great deal to national sentiment, but national sentiment wont go far towards building up a practice, especially if these young men emigrate to Ontario, and request the druggists there to refer to the "Matière Medicale des Sœurs de la Providence."

Yours truly,

"CANADIAN."

MILK AS A PREVENTIVE OF WHITE LEAD POISONING.—A singular fact is given in the *Journal de Médecine* of the effect of the habitual use of milk in white lead works. In some French lead mills it was observed that in a large working population two men who drank much milk daily were not affected by lead. On the general use of milk throughout the works the colic vanished entirely. Each operative was given enough extra pay to buy a quart of milk a day. From 1868 to 1871 no cases of colic had occurred.—*Sanitary Record*.

RULES FOR LIVING.—The Burlington *Hawk-eye* gives the following directions to those who desire to live a long life. They are compiled from eleven different health journals, hence we can cheerfully commend them: 1. Rise with the sun. 2. Never rise before seven o'clock. 3. Drink a glass of cold water before breakfast. 4. Never drink until you are through eating. 5. Eat nothing but Graham bread and vegetables. 6. Eat plenty of roast beef and mutton well done. 7. Bathe every day. 8. Never bathe oftener than twice a week. 9. Always sleep in a cold room. 10. Never sleep in a

room with the temperature lower than 45 degrees. 11. Drink nothing but water. 12. Drink nothing but milk.

OXIDE OF ZINC is recommended as a specific for the tremor of chronic alcoholism.—*Cincinnati Lancet*.

NEW PHYSIOLOGICAL PROPERTY OF STRYCHNIA.—It is asserted that strychnia, by increasing the arterial pressure, increases the secretion of the mammary glands in some cases as much as fifteen-fold.—*Druggists' Circular*.

EXTRACT OF PIMENTO AS A REVULSIVE. (DR. ED. COUTURIER.)—In cases where the persistent and blistering properties of cantharides would produce too great an effect, and where the ordinary rubefacients, as tartar emetic, croton oil, and thapsia, are not active enough, the extract of pimento may be used, which produces intense rubefaction within ten to thirty minutes. Particular care must be taken to clean the hands after handling it, so as not to get any into the eyes, nose, or mouth

PIMENTO AS A REVULSIVE.—To the list of revulsives and local irritants, M. Lardy adds the extract of pimento. The color of the extract, like that of the fruit, is a beautiful red. By being incorporated with a plaster, it may be spread upon cloth or paper, and adheres to the surface of the skin without warming. It acts rapidly, ten to twenty minutes being the usual limit, according to the point of application and sensitiveness of the skin. From the outset it causes heat, redness and slight smarting. These phenomena increase in degree for about three hours, and then remain stationary. Neither the heat nor smarting are painful, and do not hinder the patient continuing his occupation. There is no itching, and the effect remains localized. Compared with mustard, it is of about half the strength of the latter.

ESSENTIAL OILS.—Tunis is justly celebrated for its essences, such as ottar of roses, jasmine, cassie, quince, narcissus, henna, aloes, apple, orange, lemon (both acid and sweet), scented poplar, sambak, or double jasmine of Arabia. These ottars are held in great esteem on account of the delicacy of their perfume, but, owing to their high price, a very small quantity is exported, and they only serve for local consumption. The price per metical ($4\frac{3}{4}$ grains) of these ottars or essences is—roses, cassie, henna, quince, 9s. 7d., for jasmine, £1, double jasmine, 31s. 8d., orange and lemon, 4s. 9½d. A very large quantity of rose, orange flower water, and mint water is likewise distilled, with which the natives perfume their sherbets and sweetmeats.

ADULTERATION OF CREAM OF TARTAR.—Dr. Squibb, of Brooklyn, at a recent society meeting, gave some interesting statistics as to his experiments on the purity of this drug, in which he had found samples as offered for sale to vary

from 10 to 92 per cent. of pure cream tartar, the adulterations consisting of tartrate of lime and terra alba. He also told how one could go to stores in New York, where he would be taken into a room in which a sample table is set with different grades of terra alba. One, you are told, will make a beautiful, bright cream tartar, another a dull one, and so on, from one end of the table to the other, each having a particular use.—*Med. and Surg. Rep.*

CASTOR OIL BEANS are now grown as a crop in the United States. In one western county alone 2,773 acres were laid down in it last year, the average crop being 12 to 15 bushels per acre. A bushel of good seed is said to yield there about $2\frac{1}{2}$ gallons of oil.

A NEW STIMULANT.—The *British Medical Journal* gives a long account of a new stimulant which has lately been described by the papers of Australia. It is called pitcherine by the natives, and is used by them as we use tobacco, both for smoking and chewing. Its effect is that of a pleasant exhilaration; when long continued, intense and continuous excitement follows. It is used when on long foot journeys to invigorate and keep up the strength, or excite them to courage in battle; large doses are said to infuriate all the passions. Some of the natives make a plaster of the plant and place it back of the ears, believing they are influenced by it.

THE KORONICO PLANT.—John Arthur Francis indorses statements recently made in an English journal with regard to the value of the koronico plant of New Zealand (a species of broom) as an astringent, and the value of its employment in appropriate cases of diarrhoea. He says that it is an old and well-known remedy among the Maories and up-country shepherds, especially for intestinal disturbances arising from drinking stagnant swamp-water in dry seasons. The usual mode of using it is by making a strong infusion of the young leaves.

ENGLISH EARTH is the name given in America to terra alba or plaster of Paris, of which, according to an exchange, "tons upon tons are imported for the express purpose of adulterating white powders of various kinds, notably cream of tartar."

ADULTERATED SODA.—Mr. J. H. Swindells writes to the *Chemical News* to say that he has found all the samples of Scotch or bastard soda or washing soda which he has examined to be nothing more than sulphate of soda.

ESSENCE LEMOINE.—Watchmakers' oil—is made by distilling from a water bath a mixture of 200 parts coal-tar benzin, 10 parts lavender oil, 5 parts bergamot oil. It must be carefully protected from air and sun-light. Our watchmakers use the benzine of commerce.—*Hager.*

THE EUCALYPTUS IN ALGERIA.—Consul-General Playfair writes: "Formerly it was impossible for the workmen at the great iron mines of Mokta-el-Hadid to remain there during the summer; those who attempted to do so died, and the company was obliged to take the laborers to and from the mines every morning and evening, 33 kilos each way. From 1868 to 1870 the company planted more than 100,000 Eucalyptus trees, and now the workmen are able to live all the year through at the scene of their labors.

POISONING BY SALICYLIC ACID.—A case is reported from Wreschen, in Prussia, where a patient suffering from acute rheumatism was poisoned by impure and partially decomposed salicylic acid. After the first dose of about 12 grains he began to perspire very freely; the perspiration increased with two more succeeding doses, and after the fourth dose violent headache and vomiting supervened, followed by coma and death.—*New Remedies.*

HOMOEOPATHIC CURE FOR THE OPIUM HABIT.—Dr. J. H. Haynes, M.D., of Pittsburg, Pa., has published his method of cure in the *American Homoeopathist*, in an article reprinted in the *Monthly Homoeopathic Review*. The case, given in details is of a woman who had taken morphia for fifteen years, during the last five of which her daily dose had been two grains. Her treatment was as follows: Morphia was strictly forbidden. *Ipecac* tincture, 30 m., was mixed with one-half glass of water, and a teaspoonful was ordered to be taken every hour, or less frequently if it should nauseate. Three days after the commencement of the treatment the patient would hardly take morphia, even if allowed, and since that time, now five years ago, the desire for it has never once returned. Dr. Haynes says that he has treated forty cases in the same way, giving 1-5 for each grain of morphia, or its equivalent of opium in the daily dose. In two cases only has he failed, in both of which his patients continued to take the drug secretly while under treatment.

TEMPERATURE OF FLAMES.—F. Rosetti finds the temperatures of the flame of the Bunsen burner to be: In the external envelope, 1,350°; in the violet portion, 1,250°; in the blue, 1,200°.

MATE AS A SUBSTITUTE FOR TEA AND COFFEE.—Mr. O'Oonor, of the British Legation in Brazil, calls attention, in a recent official report, to yerba maté, an article largely cultivated in the province of Parana, and exported to neighboring South American countries, but hitherto not on the list of exports. He says it is more fortifying and alimentary than either tea or coffee, and much more wholesome, and can be sold at a price so moderate as to place it within the reach of all classes. He states that the Minister of Agriculture has appropriated a

small sum for the purpose of making this excellent plant known in Europe.

SULPHUR has been discovered in immense quantities at Chillan, Chili. The quality is so fine that it only needs grinding and sifting to be fit for market.

THE MASSACHUSETTS COLLEGE OF PHARMACY has moved into the "Old Franklin School House," on Washington Street, near Dover, in Boston, where its usual winter course has already opened under favorable auspices. The library and laboratory possessed by the school are among the best in the country, and the graded two years course, with compulsory and free laboratory instruction, are among the features which commend this school to students.

THE PITTSBURG COLLEGE OF PHARMACY entered upon its first session on the 1st inst., with Francis C. Phillips as Professor of Chemistry; W. C. Reiter, M.D., as Professor of Materia Medica and Botany; and S. Henry Stevens, M.D., as Professor of Pharmacy. Six lectures weekly for 20 weeks will constitute the course. A. J. Rankin is Corresponding Secretary, and may be addressed at the corner of Fourth and Ferry Streets.—*New Remedies.*

TRIMETHYLAMIA or Pseudo-propylamia is now manufactured in large quantities from beet-root mash. The dealers in chemicals in Europe sell the article promiscuously under the names *Propylamine* or *Trimethylamine*.

NITRITE OF AMYL IN SEA-SICKNESS.—Dr. Crochley Clapham, of Surbiton, has recommended in the *Lancet* the inhalation of nitrate of amyl as a preventive of sea-sickness. He recommends some capsules containing the drug manufactured by Allen & Hanbury, one of which can be broken as required. A handkerchief is moistened with the liquid, and applied to the mouth and nostrils. Dr. Clapham's experience with this drug has been confirmed by other physicians. The theory is that sea-sickness being due to a pressure of blood on the brain, the nitrite acts by relieving the congestion.

LIQUID DENTIFRICE.—A formula is given in our 1877 Diary, thus:—

- Fine potash soap..... 3 ozs.
 - Cream tartar 1 drachm.
 - Alcohol sp. gr. .91018 ozs.
 - Distilled perfumed water ... 6 ozs.
- You can flavor or color this to fancy.

TO REMOVE RUST FROM STEEL.—Steel which has rusted can be cleaned by brushing with a paste composed of $\frac{1}{2}$ oz. cyanide potassium, $\frac{1}{2}$ oz. Castile soap, 1 oz. whiting, and water sufficient to form a paste. The steel should first be washed with a solution of $\frac{1}{2}$ oz. cyanide potassium in 2 ozs. water. To preserve steel from rusting, a good method is to paint it with melted caoutchouc, to which some oil has been added.

The caoutchouc must be melted in a close vessel, to prevent its burning, and should be frequently stirred. It is also said that dipping the steel in a solution of common soda (about 1 in 4) will preserve it from rusting.

GOLD SOLUTION.—To a drachm of solution of perchloride of gold add two ounces of ether, and shake together. Polished steel articles immersed in this clear liquor will become covered with a thin film of gold.

POSTAGE-STAMP MUCILAGE.—The following is said to be the formula for the mucilage used on the United States postage stamps:—

- Dextrine 2 ounces.
- Acetic acid 1 ounce.
- Water 5 ounces.
- Alcohol 1 ounce.

Add the alcohol to the other ingredients, when the dextrine is completely dissolved.

MILK A SOLVENT OF QUININE.—Attention has recently been called to the fact, not generally known, that milk not only acts as a solvent of quinine, but also to a certain extent disguises its bitterness. It is stated that if one grain of the sulphate be dissolved in an ounce of milk, the bitterness of the salt is scarcely perceptible, while even two grains of the same quantity of solvent do not make it bitter to a marked degree. Five grains may be taken in two ounces of milk without rendering it particularly disagreeable, and if this be added to a tumblerful of milk, nearly all the bitterness disappears. The resident surgeon of the Birmingham General Dispensary recommends the use of a solution of quinine, in glycerine, in the proportion of one grain to one drachm, the dose being administered in a wine-glassful of milk. The method would seem to present special advantages in the administration of quinine to children.—*New Remedies.*

The *Medical Times* tells a humorous story of the late Sir Charles Locock, as an evidence of his powers of repartee. His great repute had induced certain vendors of quack medicine to advertise cough lozenges under the title of "Locock's Pulmonic Wafers," or "Locock's Cough Lozenges." This, of course, caused him some annoyance. One morning he met the Duke of Wellington in Hyde Park, who said, "Locock, I have a bad headache from taking your damned lozenges." "Well," said Sir Charles, "I might as well say that I am lamed by wearing your damned boots, for I wear Wellington boots." We may add that there are gentlemen in London quite prepared to supply anecdotes of this kind at a moderate price per score.

TO MAKE DRESSES INCOMBUSTIBLE.—A serious accident in a factory led one of the owners to experiment as to the cheapest and best sub-

stances for making dresses incombustible. He found that a 5-per-cent solution of ammonium phosphate accomplished this purpose.

ONE FOR THE DOCTORS.—The following *bon-mot* is of French origin. A lady in delicate health asks a cynical friend whether she shall consult an allopathic or homœopathic practitioner. "It matters but little," is the reply. "The first will kill you, the second will let you die."

HOMŒOPATHIC TREATMENT OF TAPE-WORM.—Every one is acquainted with the fact that a snake is charmed by the sound of soft music; but it remained for a German homœopath to discover that the tape-worm is susceptible of the same influence. So, at least, we are informed by our contemporary, the *Vienna Medical Press*. The inferior orifice of the patient's intestinal canal is placed in communication with a musical box, which is set a-playing. "We have not long to wait," the homœopathic doctor naively remarks. The tape-worm quickly makes his appearance head foremost, and winds himself along the connecting link toward the instrument. The latter is soon embraced in its turn, and the cure complete, for the parasite has, so to say, abstracted himself.—*Medical Examiner*.

CROTON OIL PENCILS.—For the local application of croton oil, M. Limousin recommends (*Répert de Pharm.*, 1877) the use of pencils made according to the following formula:—Two parts of croton oil are added to one of cacao butter and one of white wax, melted over the water-bath. When the mixture begins to cool, it is poured into cylindrical moulds, in which it soon solidifies. Although the pencil only contains 50 per cent. of oil, yet, owing to the avoidance of all loss through volatilisation, the revulsive action of the drug is found to be even more powerful in this form than in its natural condition, and it has been successfully employed with the view of obtaining this action by Dr. Jules Simon, at the Hôpitals des Enfants Malades. Dr. Failler has used these pencils in the treatment of tinea tonsurans. The pencils retain their properties for several months.

Shampoo Lather.—Cut 2 lbs. best oil-soap into dice; place them in an earthen pot with water and a little crystallized soda. Boil over a slow fire. After skimming, the soapy mass may be perfumed and colored to suit the ideas and taste of those concerned.—*The Perfumer's and Hairdresser's Gazette*.

FATAL EXPLOSION OF AN OXYGEN RETORT.—On Oct. 16 Mr. Edward John Wrench, son of Mr. Wrench, the well-known optician, of Holborn, was engaged in making oxygen at his residence, in 39 Gray's Inn Road, when the retort exploded, smashing the fire-grate, blowing the windows out of the sashes, and filling the rooms with dense smoke. Mr. Wrench was fearfully injured; he had sustained a cut 6 inches long in the chest, which exposed the

lungs, and a jagged wound on the left side of the neck, exposing the muscles and veins. Mr. Reginald Taylor, surgeon, was called in, but the sufferer died within half-an-hour from collapse and hemorrhage. Mrs. Elizabeth Gibson was also fearfully burned about the face. The details given in the public reports do not account for the explosion. It does not, however, stand alone. At least two other fatal explosions have occurred, within recent years, during the manufacture of oxygen. In both of these binoxide of manganese was used as the source of the gas, and it was afterwards discovered that the oxide was adulterated in one case with soot and in the other with antimony sulphide. These mixtures are as dangerous as gunpowder when placed under the conditions required for the manufacture of oxygen, and it is always wise to test beforehand the material about to be used.

INCOMPATIBILITY OF CALOMEL WITH CERTAIN BROMIDES.—Mr. Norman A. Kuhn has studied the action of calomel with the bromides of potassium, sodium, ammonium, and zinc, and finds that a portion of the calomel is converted into a soluble mercuric salt, a considerable portion of the calomel, under some circumstances, being thus changed. This new-formed salt is poisonous, a kitten having been killed by some of it in the course of an hour and a half.

"A SHORT CUT TO THE TINCTURES OF THE BRITISH PHARMACOPŒIA."—By Henry Judd. A mnemonic, showing how an accurate knowledge of the proportion, preparation, time, dose, &c., of the sixty-eight tinctures may be easily and permanently remembered in two hours. London: Printed for the Author. Price one shilling. We can add nothing to the title; the mnemonic for tinct. cinchonæ co. is a sample of the treatment the tinctures undergo:—

Six ingredients, you must know,
Make the tinct. cinchonæ co.;
Serpentary, bark, and peel,
Spirit, saffron, cochineal.

"All rights are reserved," so that we must "quote no more."—(*Chemist and Druggist*.)

A very curious case is reported from Spalding. A firm of chemists being summoned for not fully entering into the "Poison-book" a sale of vermin-killer, the date of sale (it was alleged) having been omitted, the solicitor for the defence contended with much skillful argument that the chemists were not required to produce their books. The law, he said, required them to make the entry, but they might destroy the same the next minute if they so pleased. The magistrates were evidently fogged, and they consequently faced both ways—over-ruling the solicitor's objections, but dismissing the summons.—*Chemist and Druggist*.

ENGLISH PATENT WASHING CRYSTALS.—Six parts soluble glass, 29 parts anhydrous washing soda, 60 parts bicarbonate of soda, 5 parts water.—*Hager*.

The capital of Turkey is like a whimsical patient, because it's constant-to-no-pill.—*Ec.*