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HALIFAX, NOVA SCOTIA, JUNE, 1898.

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1898.

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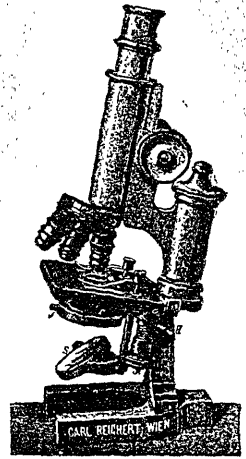
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VOL. X.

HALIFAX, N. S., JUNE, 1898.

No. 6.

Original Communication.

ARTIFICIAL FEEDING OF INFANTS.*

By **WM. NORRIE, M. D.,** River John, N. S.

The proper artificial feeding of the infant belongs to an advanced civilization. As science and civilization advance, so does a proper knowledge of the artificial feeding of the infant increase. Statistics have taught us that the bills of mortality are far greater among children artificially fed than among those breast fed. One reason for this may be that young children differ not only in general digestive capacity, but also in ability to assimilate this or that kind of food. One baby thrives upon fare which is innutritious if not actively hurtful to another. So to prescribe a dietary for a young infant is to engage in an experiment which, if it do not succeed at once, may require many changes in detail before it can be brought to a successful issue.

Perhaps in no department of domestic life is so much gross ignorance manifested as in the care of the infant in the earliest stages of its mundane existence. As the whole future of a human being's education depends upon the method it is taught the alphabet, so the whole health or sickness of the child's future may depend upon how it is fed during the first few days of its existence. One difficulty to be met is the adaptation of food to the individual case. The starting of a human being in life is a subject which should be carefully studied not by physicians alone but by the laity in particular. No woman should engage as a nurse without having a clear and reasonable knowledge of this subject. But

*Read at meeting of Medical Society of Nova Scotia, 1897.

nursery superstitions like other delusions die hard. Some obstetricians have shown that with the exception of "scrofulous" and other inherited diseases, with which the child is born, improper feeding is the most prolific source of disease in early infancy. The earlier weeks of life is a period in which the child's digestion is most likely to be tampered with. A second period is when the irritation arising from the beginning of dentition necessitates the addition of new articles of diet. And again at the time of weaning there is usually a sudden and entire change in the character of the food. Breast fed infants are generally all right. Milk from that source is a precious substance which the child swallows straight from the gland pure and uncontaminated by germs. Children usually thrive when fed on a sufficient supply of breast milk. But a great many mothers are unable to nurse their babies; consequently a large number have to be brought up by other means. The great problem, then, is to imitate the natural food of which the child has been deprived. The more closely this can be done the better the prospect of rearing the infant with success.

It is during the earliest period of a child's existence that the function of digestion is being established and in a state of unstable equilibrium, and following the rule of functional establishment, the stomach is in its most active period of growth. Hence the most careful regulation of the bulk of the food given is needed to correspond to this activity, in order that we should not weaken the digestive function by overtaxing its capacity and yet provide the proper materials for nutrition. Thus we aim to avoid the dyspepsia of the later periods of infancy and childhood, the seeds of which are too often sown in this early transitional period.

We have here to deal with two questions, viz., infantile digestion and infantile development. At the same time we should recognize the fact that the problem of artificial feeding is not a simple factor—what food we shall give to the infant—but is a combination of factors of which the kind of food is only one. And all these factors, from which we educe the general problem for the average infant and the special problem for the individual, must approach as closely as possible to the analogous factors which nature freely presents to us for investigation—that is, we must follow nature as closely as possible. Our scientific knowledge and ingenuity have not yet enabled us to imitate nature exactly, and we have not, therefore, yet obtained an ideal method of artificial feeding, and we must be especially careful not to be led astray by the fictitiously brilliant results which are reported from time to time in favor of certain foods.

Instances continually occur where one food will fail and another when substituted for it succeed. And yet these successes are merely temporary, and the mortality in children thus fed always remains far above that of those fed upon breast milk.

It is certainly wise and economical not to spare expense and trouble in arranging the infant's food, for, as we have seen, the period of active growth of an organ is the time when its function is readily weakened, and when once weakened the digestive function is a prolific source of annoyance and expense in childhood and adolescence. Cheap foods and cheap methods of feeding should not be tolerated either in infant or in adult life.

What are the general factors of the problem which constitute nature's method of feeding? We have first a receptacle, the human breast, which mechanically provides a fresh supply of food at proper intervals, absolutely prevents fermentation of the food before it enters the infant's mouth, forms the mouth by the process of sucking, incites to action the necessary digestive fluids, avoids a vacuum by collapsing as it is gradually emptied—thus allowing the food to flow continuously, and finally is practically self-regulating as to the amount of food, according to the infant's age. Secondly, the food itself is adapted to the infant's digestive function and for its development, by its temperature, its alkaline reaction and chemical composition.

Given these factors, how nearly can we approach them artificially? Human ingenuity has not been able to devise anything which approaches the perfection of nature's receptacle, and the very best we can do to offset this failure is to adopt that which is exactly the reverse, viz., a receptacle of absolute simplicity.

One of the grand objects in the artificial feeding of the infant is the proper sterilization of its food. It is our province to see that the child's food is deprived of all developed bacteria before it goes into the infant's stomach. In sterilizing we must see that it does not alter the chemical attributes of the food, as is essentially the case where the sterilization is accomplished by boiling. In Rotch's steaming or hot water process the receptacle is sterilized as well as the food. It has been shown that healthy milk from the healthy human breast can be kept free from bacteria for several hours, and days, in sterilized tubes. But on the contrary, in women whose temperature was raised from fissures and excoriations of the nipples and by general puerperal infection, bacteria were found in abundance.

Now, speaking from clinical experience, we should withdraw the infant from the breast in that class of diseases where we know bacteria to occur in the milk. Reference has already been made to the developed bacteria. If it is desired to prepare the food so that it shall remain sterile for some time it is necessary to sterilize for several days in succession, for the first sterilization only destroys these developed bacteria while the spores are left to develop later on.

Since so much has been said about the sterilization of infants' food it is necessary that every nurse should have a sterilizing apparatus. At Harvard they use a round pail eight inches in diameter and fourteen inches deep, raised on three legs sufficiently high to allow an alcohol lamp to stand under it. Four inches from the bottom of the pail, on the inside, is a perforated tin diaphragm on which the feeding tubes stand while being sterilized.* The pail has a cover and a handle. Water is placed in the bottom of the pail, and when the water is heated by the lamp the tubes are soon enveloped in steam.

The tubes are provided with a suitable rubber nipple, and a small hole near the end of the feeding tube prevents a vacuum being formed and permits regulation of the rate of the flow, while it allows it to be continuous. The artificial receptacle is not self-regulating, and hence we must estimate the amount of food which nature provides the average infant at various ages and deduce the proper amount for the special infant. The feeding tubes may be graduated for the more important periods of growth for the purpose of continually impressing upon the mother and nurse what the physician has the opportunity of telling them perhaps only at the beginning of the nursing period, namely, that the error is in giving too much food rather than too little—an error which naturally results when, as is commonly the case, the usual 8 oz. nursing bottle is provided as the receptacle at the very beginning of infantile life. The stomach of an infant five days old has been found to hold about 25 cubic centimetres. Investigators have shown that the activity of growth in the stomach capacity can be represented by the ratio of 1 for the first week to $2\frac{1}{2}$ for the fourth week, and $3\frac{1}{2}$ for the eighth week; while it is only $3\frac{1}{3}$ for twelfth week, $3\frac{1}{2}$ for sixteenth week, and $3\frac{2}{3}$ for twentieth week.

We thus see that there is a very rapid increase in capacity for the first two months of life, while in the fourth and fifth month the increase is slight. Guided by these data, which we find correspond closely with

* I use the word sterilization instead of Pasteurization, as being more familiar.

the results of clinical investigations bearing on this point, we should rapidly increase the quantity of the food in the first six or seven weeks, and then give the same quantity up to the fifth or sixth month, unless the infant's appetite evidently demands more, when of course a gradual increase should be made. A considerable increase in the quantity needed also usually takes place between the sixth and tenth months. S. Snitken, as the result of careful investigation in the Children's Hospital at Petersburg to determine the amount which should be given in the first thirty days of life, finds that the greater the weight the greater the gastric capacity. His general results also show that one one-hundredth of the initial weight should be taken as the starting figure, and to this should be added one gramme for each day of life.

The younger the infant the greater the metabolic activity, and hence the greater need for frequent feeding, for nutriment is required not only for the excess of waste but also for the rapid proportionate growth. This makes the intervals of feeding a factor of considerable importance in the management of the infant's dietary.

Some of the main points in addition to the sterilization of the food are the provision of test paper for ascertaining the reaction of the food, and a bottle of soda solution for keeping the tubes pure during the intervals of nursing.

We must be careful not to give food in too large quantities or at improper intervals. Whatever the food may be it must be adapted to the wants of the infant. It must contain all the elements of nutrition as nearly as possible in the proportions observed in human milk. It must be well within the powers of the stomach, so as to leave little undigested residue to ferment in the bowels and be a source of mischief. It must be fresh and in good condition. And, lastly, to be a perfect food it should contain a sufficient proportion of the vitalising element, whatever that may be, which endows it with anti-scorbutic properties.

Now, milk contains in itself all the elements of nutrition, and the milk of many animals approaches human milk in composition more or less closely. Any of these may be used, but practically we are forced for convenience sake to fall back upon cow's milk, which is always at hand, and thus can be adapted to our purpose without much difficulty.

The various patent foods do not all depend for their basis on milk, and without the addition of milk would show but an insignificant percentage of many of the most important ingredients of food. So that logically we should speak not of the various stuffs as food, but merely as

adjuvants to cow's milk, for when this is thoroughly understood it explains the apparently successful results of innumerable foods, which in reality are merely a means of modifying the almost universal representative of the artificial foods—cow's milk. By chemical analysis we find cow's milk to differ very materially from human milk, and it should be modified before being used as food. It may be modified by water or by the patent foods, or by any adjuvants such as barley water, lime water, or its own cream.

There are a great many patent foods, all claiming about the same advantages and closely resembling each other in their constituents and in their honest endeavours to make cow's milk easily digestible, and also to make their resulting analysis agree as closely as possible with human milk. There are, however, certain differences by which we can divide them into classes, and we can speak of individual foods as representing their class.

One of the disadvantages of cow's milk as compared with human milk is that it contains a larger proportion of curd, but is deficient in sugar, and, to a small extent, in fat. To bring cow's milk, then, to the standard of human milk it must be diluted and sweetened. But this is not enough. The curd of cow's milk coagulates in one large tough lump which resists digestion; while that from the human breast forms a light loose clot which is easily digested or penetrated by the digestive fluids. When, therefore, cow's milk is used, steps must be taken to prevent this firm clotting of the curd. If we add to the milk some thickening material the particles of curd are kept apart, so that when the casein coagulates in the infant's stomach by the action of the gastric juice the clot consists primarily of a multitude of little lumps of curd instead of one solid mass. For the thickening material some form of starch is often used, but as this is difficult of digestion by the young child barley water is to be preferred. Barley water itself contains starch, but in comparatively small quantity, and very finely divided. It rarely disagrees, and when mixed with a fourth part of milk suits the large majority of newborn infants. Barley water should not be more than six hours old. If the cow's milk be used uncooked as it is delivered to the house it retains all its antiscorbutic properties, but it is probably loaded with germs of various kinds which may indeed be harmless, but may be capable of exciting dangerous fermentations or producing serious disease. Epidemics of diphtheria and scarlatina, as well as bowel complaints of great gravity, may owe their origin to contaminated milk. Unfortunately boiling the

milk renders it less active as an antiscorbutic; but it is wiser to make this sacrifice for the sake of avoiding the greater evil and to use milk which has been boiled or sterilized. If the latter, it is best to add the barley water to the milk before sterilization and to allow the child to suck the mixture from the sterilizing bottle fitted with a mouth-piece.

Now what are we going to do with all the various patent foods? On the whole they are not very reliable. We have the markets flooded with them, and the competition is great, and when once they have made a reputation I cannot say but that irregularities and changes—slight, perhaps, in the eyes of the manufacturers—may creep in and carry their analysis still further from that of the standard, human milk, than it was in the beginning. Analysis shows clearly that these patent foods differ from year to year, giving way to a cheaper production. A striking example of the truth of this statement is the world-wide reputation of Mellins' food, with its printed analysis showing that it contains no starch, its starch having been converted into sugar. Several careful analyses, made by the ablest of our chemists, show now conclusively that all the starch has not been converted into sugar, and that it is present in a very appreciable quantity—perhaps, as it may be argued, not in sufficient quantity to do any harm, but as it is claimed not to be present at all, it gives rise to an element of uncertainty. If we wish to be exact in the preparation of our food, and if we wish to introduce starch into the food, we should prefer to use a food where starch is acknowledged to exist and can be reduced to the amount which we may deem necessary for the special case. The patent foods which claim to contain starch in a certain percentage may, however, vary so much as to make any combination we wish an uncertain rather than an exact one. Besides the objections just given to these foods as a whole, it will be seen, by referring to the representatives of each class, all patent foods, even when mixed with cow's milk according to the maker's directions, present a striking similarity in that they all show a marked variation from the standard, human milk.

The patent foods can practically be divided into those which are manufactured from cereals and those which are not. The first class contains the starch of the cereal unchanged or converted into sugar. We have then (1) a cereal food with its starch unchanged, represented by imperial granum; (2) a cereal food with its starch claimed to be converted into sugar, represented by Mellins' food; (3) a cereal mixed with

condensed milk, its starch unchanged, represented by Nestle's food ; (4) condensed milk ; (5) the so-called humanized or peptonized milk.

The great object in using the patent foods is to make them correspond as closely as possible to the standard. This is not an easy matter. It can be readily understood that no matter how cow's milk is diluted with water it cannot be made to correspond to human milk. It is well, however, to remember that clinical experience has shown that infants seem, even in the early days of life, to digest the casein well enough provided that it is sufficiently diluted—that is about four times, which reduces it to one per cent. And this will be of significance when we come to prepare a food which will correspond to human milk. If, however, we reduce cow's milk so that the percentage of albuminoids is one per cent., the fat and sugar fall so far below the standard that although the ash has the proper percentages, yet we have an acid food markedly deficient in nutritive quality.

Condensed milk is one of the most interesting foods which we are called upon to deal with, and represents, in its preparation, its chemistry, and its clinical results an almost perfect illustration of all that has been so far said on the subject of artificial foods. It has strong advocates and strong opponents, but a simple consideration of its properties will easily explain the causes of its successes and of its failures. The process of manufacture of condensed milk sterilizes it to a certain degree, a very important factor in its favor which does not exist in cow's milk. It is also superior to cow's milk in that when mixed with water it is, although not alkaline, still not acid, and its large proportion of cane sugar helps to avoid the occurrence of fermentation which so readily occurs in cow's milk.

The nearest approach to the standard is obtained by diluting condensed milk with six parts of water, which results in giving the proper percentage for the albuminoids, sugar and ash. But the fat is much reduced, and unless supplied in some way we should suppose that the nutrition would suffer, and this supposition appears to be supported by clinical results. That is, clinically, condensed milk represents a food easily digested, but not sufficiently nutritious. The former is explained by its low percentage of albuminoids and ash, its neutral reaction, its anti-fermentive properties, and its proper per cent. of sugar ; the latter by its great lack of fat. Among the poorer classes and in infant asylums it is a favorite food, because the infants digest it so easily. But the testimony of those clinical observers who look beyond

the temporary digestion to the subsequent nutrition of the child supports the view that condensed milk, even if we set aside the objections which in general arise from its being a patent food, must be modified by more than the addition of water before it can safely be given as a continuous food to the average infant. For preparing the way for other more nutritious foods in cases of difficult digestion, for convenience in travelling, and where for any reason the intelligence or the proper desire to take trouble about the food is lacking in the parents, condensed milk from its simplicity in preparation as well as from its other attributes already mentioned is a valuable addition to other rational methods of artificial feeding. The commonly accepted opinion that condensed milk contains too much sugar is an error, for it has been proved that as it is usually given the sugar in the mixture is below the proper percentage, and if it is diluted six times, as recommended, we have then merely the fat to deal with, and the reaction, which should be made alkaline. We must then modify this condensed milk mixture by the addition of the proper amount of fat. For although it is admitted that a large amount of surplus fat is frequently found in the napkins of infants, whose digestion and nutrition are normal and whose food is breast milk, yet we have no right to conclude from this that a small per cent. of fat is sufficient for nutrition, or that a large per cent. will be taken care of by this outlet. In fact it is far more probable that nature introduces a certain per cent. of fat in human milk with a purpose other than that of simple nutrition. From what has been said we would naturally expect that unless the standard per cent., or at least a near approach to it, was attained, trouble would be likely to arise. It has been found clinically that under the proper percentage of fat the nutrition suffers. But where the fat percentage was decidedly above the standard both nutrition and digestion were affected unfavorably. Unless, then, it is impossible to be more exact in arranging the percentage of fat in condensed milk, as is often the case among the poorer classes, where codliver oil is used as a cheap expedient for rectifying this source of error, the addition of indefinite amounts of fat to a food is to be deprecated, just as it is unwise to add indefinite amounts of sugar, and we should seek for a better combination than is offered to us in condensed milk. Perhaps the most elegant preparation of fat now in the market is that introduced by Dr. Gowan, known as peptoleine.

Any food which introduces an element foreign to the ingredients of human milk is to be looked upon with suspicion, as it is not likely that

we can improve on nature's method of adapting the food to the infant's digestive functions. In the patent foods, starch seems to be the foreign element.

It, of course, is not merely necessary to know the percentage of the different ingredients as they exist in the food itself, for what concerns us is the percentage as given to the infant.

Tables have been constructed showing the sum totals of the milk percentages and the food percentages. For instance, the success of imperial granum is evidently in its correct percentage of albuminoids and ash, making it easily digestible, but its failures are readily explained by its reaction, its foreign ingredients and its very low percentage of fat and sugar. Reference has been made to the capability shown by even very young infants to digest the casein of cow's milk when it is reduced to one or two per cent., and this is a factor which probably enters to a greater degree than is usually recognized in the easy digestion of these foods, and possibly too much credit has been given to the starch as a means of making the casein digestible.

This was suggested by Dr. Meigs some years ago and is worth considering, as it certainly is more rational not to introduce a foreign ingredient like starch into the food if we can make it digestible in some other way.

Examining the question of casein percentages in the four different classes of patent foods we find that in Mellin's food it is 2.17; in condensed milk $\frac{1}{2}$, water 10, it is 1.45; in imperial granum it is 1.64, and in barley water 1, milk 2, it is notably diminished in amount and naturally is more easily digested than when it stands at a higher per cent., as it does in cow's milk undiluted. The fat and sugar also are very notably diminished in amount in all these mixtures. We therefore find from this that there is a decided failure to fulfil the factor of nutrition when cow's milk is modified with these foods, and that all of them need still further modifications, some in one ingredient and some in another.

The tinned foods we find now divided into four classes:—

1. Milk concentrated by evaporation to the consistency of thick cream and preserved with sugar or malt.
2. Milk dessicated and mixed with partially converted starch.
3. Foods consisting merely of the flour of some cereal baked.
4. Foods consisting of wheaten flour more or less completely digested or mixed with malt or pancreatin.

These are all faulty nutritives, mostly lacking in fat. Protein is in

SYR. HYPOPHOS. Co., FELLOWS,

— IT CONTAINS —

The Essential Elements of the Animal Organization—Potash and Lime;

The Oxidizing Elements—Iron and Manganese;

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And the Vitalizing Constituent—Phosphorus; the whole combined in the form of a Syrup, with a **Slight Alkaline Reaction.**

It Differs in its Effects from all Analogous Preparations; and it possesses the important properties of being pleasant to the taste, easily borne by the stomach, and harmless under prolonged use.

It has Gained a Wide Reputation, particularly in the treatment of Pulmonary Tuberculosis, Chronic Bronchitis, and other affections of the respiratory organs. It has also been employed with much success in various nervous and debilitating diseases.

Its Curative Power is largely attributable to its stimulative, tonic and nutritive properties, by means of which the energy of the system is recruited.

Its Action is Prompt; it stimulates the appetite and the digestion, it promotes assimilation, and it enters directly into the circulation with the food products.

The prescribed dose produces a feeling of buoyancy, and removes depression and melancholy; *hence the preparation is of great value in the treatment of mental and nervous affections.* From the fact, also, that it exerts a double tonic influence, and induces a healthy flow of the secretions, its use is indicated in a wide range of diseases.

NOTICE—CAUTION

The success of Fellows' Syrup of Hypophosphites has tempted certain persons to offer imitations of it for sale. Mr. Fellows, who has examined samples of several of these, FINDS THAT NO TWO OF THEM ARE IDENTICAL, and that all of them differ from the original in composition, in freedom from acid reaction, in susceptibility to the effects of oxygen, when exposed to light or heat, IN THE PROPERTY OF RETAINING THE STRYCHNINE IN SOLUTION, and in the medicinal effects.

As these cheap and inefficient substitutes are frequently dispensed instead of the genuine preparation, physicians are earnestly requested, when prescribing to write "Syr. Hypophos. FELLOWS."

As a further precaution, it is advisable that the Syrup should be ordered in the original bottles; the distinguishing marks which the bottles (and the wrappers surrounding them, bear can then be examined, and the genuineness—or otherwise—of the contents thereby proved.

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FOR MAKING LITHIA WATER OF A KNOWN STRENGTH WHAT CAN
BE MORE SATISFACTORY THAN

Wyeth's Compressed Effervescing Lithia Tablets.

WYETH'S LITHIA TABLETS

are most convenient for the preparation of artificial Lithia Water, and the great advantage these tablets have over the natural Lithia Water is that the dose can be regulated very readily to suit the case by dissolving one or more in any desired quantity of water

WYETH'S LITHIA TABLETS

when taken in doses of from one to two tablets, dissolved in water, and repeated two or three times daily, exerts a marked influence in cases where patients are voiding uric acid gravel, causing the formation of deposits to become less or cease altogether.

WYETH'S LITHIA TABLETS

have been so perfected that they dissolve almost instantly in water, and a tumblerful of Lithia Water of a known strength can be quickly, easily and economically made by dropping one or more of these tablets into a glass of moderately cold water, producing a pleasant and palatable draught.

Price, per dozen bottles, 5 grains, 50 tablets in each, \$5.00
" " " " 3 " " 40 " " 4.00

Wyeth's Effervescing Anti-Rheumatic Tablets

OF SALICYLATES, POTASSIUM AND LITHIUM.

(Each Tablet represents 3½ grains of Combined Salts.)

These Tablets of Salicylates of Potassium and Lithium, in the above proportions, are readily soluble, effervesce quickly and freely producing a pleasant, sparkling draught, and we believe, where salicylate salts are specially indicated, will have the cordial endorsement of physicians.

This combination is recognized as almost a specific in the treatment of **Acute and Chronic Rheumatism, Rheumatic Gout** and kindred ailments, and is an invaluable remedy in all **febrile affections** inducing headache, **pain in the Limbs**, muscles and tissues: it is also prescribed in **Lumbago, Pleurisy, Pericarditis**, and all muscular inflammatory conditions.

Price per dozen bottles - - - \$4.00

(Each bottle contains 50 Tablets)

DAVIS & LAWRENCE CO., LIMITED.

MONTREAL.

SOLE AGENTS FOR CANADA.

too small proportion, and other nutritious matters are scanty, especially the bone-forming element. Others contain unconverted starch in excessive quantity, and are therefore trying to the digestive capacities of an infant.

What is peptonized milk? It is cow's milk with its casein partially or entirely pre-digested by means of the extract of pancreas and soda. No doubt casein of cow's milk is a source of trouble to the infant's digestive apparatus, and under certain circumstances can, with great benefit to the infant's digestion, be treated by pre-digesting it for a time. It is folly to force down the infant's throat an amount of casein above the standard per cent. Mellin's food may be given during the first three months of an infant's life, because in it the starch is almost completely pre-digested and converted into dextrine and maltose. One or two teaspoonsful may be added to each alternate meal of milk and barley water for the sake of giving variety. Starches are to be used for infants below the age of six months with great caution.

Syrupy condensed milks are to be reserved for the first three months of the infant's life.

A much greater amount of time, expense and thought is given among all classes to the preparation of food for the adults of the family than for the infants. This is a mistake, both from a humanitarian and economical point of view, for the infant is much more susceptible to irregularities of diet with their resulting suffering than the adult, and, when once the train of symptoms usually called dyspepsia is established, infinitely more trouble and expense are entailed than if more exact methods of feeding were adopted before the digestion had been tampered with.

To Meigs, of Philadelphia, is due unqualified credit, not merely for devising the mixture of which I will speak, for any good mathematician and chemist could have done that, but for carrying out the principle which it has been my chief object to touch in this paper, viz, to prepare the food free from foreign ingredients, and by chemically altering the constituents of cow's milk and specially reducing the casein to one per cent. to clinically adapt the food to the average infant's digestion.

Dr. Meigs has shown that by combining two parts of cream containing 14 to 16 per cent. of fat, one part average milk, two parts lime water and thirteen parts sugar water (consisting of $17\frac{3}{4}$ drams of milk sugar dissolved in one pint of water), we have an alkaline mixture with the percentage of its ingredients closely corresponding to that of human

milk. In the early weeks of lactation, after the mammary function has been fully established, it is a good plan to have a number of analyses made of the mother's milk and to keep the result as a control record to serve as a guide for the preparation of an artificial food in case, as so frequently happens, something should occur to end the nursing at an early period.

The bills of mortality among infants are very great. According to the best authorities, of every 1,000 children born, at the end of a year only 832 are living. Of the 168 deaths no doubt many could be traced to derangements caused by hand-feeding.

It might be well to finish this paper by stating, as a general rule that whenever digestion is difficult and the nutrition of the child is unsatisfactory, we should aim at plenty of variety in its meals; that we should not persevere with a food which is found to disagree; and that as cooked milk is weak in antiscorbutic properties, we must be always on the watch while using it for early signs of infantile scurvy. It may also be remarked that healthy digestion depends in a great measure upon the general management of the infant. Soiled linen should be removed from the nursery without delay, and the room should be frequently ventilated so as to keep the air pure. Great attention should be paid to warmth of the child's feet and legs, and the washing of its body should be carried out as quickly as possible and without undue exposure. An infant whose feet are habitually cold never has a good digestion, and many a fatal attack of gastritis has owed its origin to a chill contracted by careless exposure in or after the daily bath.



Clinical Reports.

A CASE OF AMYOTROPHIC LATERAL SCLEROSIS.

By F. W. GOODWIN, M. D. C. M., Professor of Materia Medica, Halifax Medical College.

In June, 1895, I was called to see B. G. S., dyer, aged 54. He complained of weakness in the right wrist. Occasionally he was engaged in catering, and first noticed the weakness when pulling corks.

There was nothing at first to lead me to think his condition was serious; but the weakness continued and I soon began to observe wasting of the interossei muscles and suspected progressive muscular atrophy. As the case proceeded the muscles of the forearm began to waste and they were affected by fibrillary tremors.

Dr. D. A. Campbell was called in, and after a series of tests, found the sensory system unaffected. There was some exaggeration of the patellar reflex at the time, but nothing further could be noticed wrong with the legs.

The wasting proceeded upward and attacked the muscles of the arm. Then the other wrist became affected and the left arm progressively behaved like the right. The patient was kept upon arsenic and belladonna with massage and the faradic current.

With a view of forestalling a resort to quackdom, in Feb. 1896, I sent him to M. Allen Starr, of New York. He remained in New York until April, and after he came back I received the following letter from Dr. Starr:—

My dear Doctor:—

I expected to send a letter to you by Mr. S. when he went home, but he was called away suddenly and I did not see him.

My diagnosis in his case is amyotrophic lateral sclerosis, beginning in the cervical region in the gray matter with the resultant atrophy, and paralysis in the muscles and considerable vasomotor disturbance, tremor and diminution of faradic reaction, with increased mechanical excitability in all the muscles on percussion. That there is also lateral sclerosis is evidenced by the increased knee jerks and the slight difficulty in the balance. The condition is a rare one and in the outset is difficult to distinguish from progressive muscular atrophy, but the increased knee

jerks and the gradual invasion of the legs by the paralysis enable one to distinguish the two. His prognosis seems to me to be bad for total recovery, and in only one case have I seen the disease arrested. I have such a case now under observation four years, where the disease came to a standstill about at the point at which Mr. S. now is. I doubt very much if drugs do much good, though I put him upon alternate doses of arsenic, 1/50 of a grain three times a day for a week, and corrosive sublimate 1/50 of a grain three times a day for a week, and this I would recommend you to keep up. The most important element in the treatment is the massage and the use of spinal douches, and he seems to think that these have been of service. I should like very much to know about the further progress of the case, as I was interested in his condition.

Yours sincerely,

M. ALLEN STARR,
per W.

On his return I noticed the legs were becoming progressively paralyzed, but the wasting seemed to progress slowly.

Then he took two months of the Bennett * treatment, but concluded it made him much worse.

We went on with massage and electrical treatment. Last April he could with great difficulty walk, with some one on each side to support him. The speech was noticed to be indistinct at times, and grew worse. He talked something like a man with a cleft palate. The head was with difficulty supported and the respiratory muscles began to waste. On attempting to whistle he could not purse up his lips. Deglutition became difficult.

In August last Dr. Hebron, of skin disease fame, saw him and promised to cure him in six months if he would go to Hot Springs. He told him there was nothing wrong in his spine at all.

But another star arose on the horizon hereabout in the shape of one Dr. Green, who styled himself an osteopath. I was interested to see something of the mystery of his art, and when he was sent by an officious friend I stood aside awaiting what wonders he would do.

He told them there was a little bone slightly out of place in the spine. This agreed better with patient's idea of his own case and he forthwith employed him for a month's treatment. (\$25.00 in advance).

* A local thaumaturgist who "specializes" with "electric" belts, etc.—Ed.

He put the limbs through various movements, something like Swedish movement I judge from what I could learn, though I did not see the manipulations. The patient thought he improved so much that another month's engagement was made. (\$25.00 in advance).

But about the fifth of the month the patient contracted a bronchitis. I saw him about the 10th of October. When mucus began to collect it was very annoying. It could not be expectorated on account of the paralysis of respiratory muscles. Deglutition became almost impossible and he died on the 27th of the month.

The patient's family history contained no hereditary disease, and there was no history of syphilis. The only clue to any weakness of constitution previous to the onset of the disease was the fact that two daughters died of consumption.



REPORT OF A CASE OF LABOUR COMPLICATED BY A POLYPUS.

By A. P. REID, M. D., &c., &c., Middleton, Annapolis Co., N. S.

On Monday, May 16th, Dr. C. was called to attend Mrs. D., aged 40, in her fifth confinement.

The amniotic waters had escaped during the night and pains were well marked, but instead of the foetal head there was a fleshy mass occupying the pelvic cavity. The patient was very anemic and much debilitated.

He sent for Dr. M. in consultation at 8 a m., and as labour pains were strong they decided to wait for a time for developments.

The fleshy mass was pushed onward, and, projecting externally, also filled the pelvic cavity. The head could be made out above the brim, and efforts were made to apply the forceps, which were unavailing owing to the head not having engaged in the pelvic brim. It was decided to call me in consultation, and at 4 p. m. I found a large projecting mass that resembled placental tissue and was about the size of an ordinary placenta. This was attached by a fleshy pedicle to the posterior lip and body of the uterus, and quite filled the pelvic cavity. There was then but little hemorrhage, the head was above the brim, the pains relatively strong, but the patient very weak and exsanguinated.

An effort was again made to apply the forceps, but after one blade was introduced the mobility of the head and the fleshy tumour filling the pelvis made the application of second blade impracticable.

I then decided to attempt version, which I found a most difficult proceeding under the circumstances. Dr. C. gave chloroform (not more than a teaspoonful was used altogether), and Dr. M. assisted.

One leg was seized and the foot brought down, secured by a bandage and then allowed to recede. Judicious traction on this, (it was impossible to secure the other leg), assisted by the hand of the operator over the breech gradually produced version. The child was delivered then without further trouble, and the placenta detached and removed.

The tumour was drawn down as far as possible and a double ligature (by transfixion) applied round the pedicle (which was about the size of a man's wrist), and it was removed with the scissors. It weighed between four and five pounds.

It was fibrous in character and no doubt was a uterine fibroid, that, attached to the posterior wall and projecting into the uterine cavity, had become a large polypus, extruded as a result of pregnancy.

The patient bore the operation very well, not suffering and not requiring much chloroform, which was discontinued as soon as the version was completed. Everything about her was tidied up and warmth applied and stimulants given, and there were hopes that she would rally.

About an hour after the delivery, cardiac failure became very pronounced. Strychnia hypodermics and every means of stimulation were resorted to, but she gradually passed away, the heart's action being inappreciable for some time before respiration ceased. Artificial respiration was kept up for some time, but all was of no avail.

REMARKS.—The pregnancy had not progressed more than to the eighth month and there is the probability that the tumour complicated the previous labour, though I could not get many details of it. She had suffered from continuous hæmorrhages for the past two years and nothing had been done for relief, so that she entered on her last confinement with a very poor prospect of rallying, even if the labour had been without complication.



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Editorial.

TUBERCULOSIS AND THE FORECASTLE.

We have much pleasure in directing the attention of our readers to a brief report, in the proceedings of the St. John Medical Society, of a very important paper read before that society by Dr. J. E. March, Quarantine Medical Officer at St. John. We trust to be able to publish the full paper in a future issue of the NEWS.

We welcome this communication from Dr. March as a new lever which will undoubtedly prove of much service in bringing about the state control in tuberculosis for which the NEWS contends. The communicability of this scourge is now fully recognized. The possibility of limiting its spread by proper hygienic methods has been fully established. The mortality from the disease exceeds by many times that of all other infectious diseases combined. And yet while we spend money willingly and wisely in the endeavor to prevent others of the infectious diseases, we calmly fold our hands and make no attempt whatever to combat tuberculosis. It is just as though we had found an inevitable and must accept it.

Now it is not according to the spirit of the age to meekly style any obstacle insurmountable, and, as far as the limitation of tuberculosis is concerned, we have good reason to believe that it might be accomplished with much less effort than has been expended in the case of the diseases which are now under governmental control. Our indifference to the subject deserves no better name than folly. It is surely high time that the profession took a stand in the matter, and we would suggest that, as a preliminary move, a committee be appointed at the coming meeting of the Maritime Medical Association to consider the most advisable way in which to bring the question to the attention of the governments at Ottawa and at the provincial capitals.

MARITIME MEDICAL ASSOCIATION.

THE present indications are entirely favorable for a good attendance at the coming meeting of the Maritime Medical Association, July 6th and 7th. Excursion rates have been obtained which include not only doctors, but their families as well. The entertainment committee propose to spend two hours of Wednesday afternoon at the Studley quoit grounds, and as the golf links are nearby, those who desire to play golf will have an opportunity of doing so. Thursday afternoon there will be an excursion on the harbor and Bedford basin, with a supper at the Florence Hotel, which has a short but brilliant reputation for catering to the wants of the inner man. The scientific programme includes an address by the President of the Maritime Medical Association, an address by the President of the Medical Society of Nova Scotia, several general discussions and papers on different subjects, a discussion on the Treatment of Typhoid Fever opened by Dr. R. MacNeill, of Stanley, P. E. I., and a discussion on the treatment of Empyema introduced by Dr. James MacLeod, of Charlottetown, P. E. I.

The following papers have been promised, viz. :

A fatal case of Bradycardia occurring in a young man. C. D. Murray, M. B.; C. M., Halifax, N. S.

The claims of medical men for higher fees in our County Courts and the necessity of petitioning the Legislature for an amended law. R. MacNeill, M. D., Stanley, P. E. I.

Reports of interesting cases. S. Dodge, M. D., Halifax.

Treatment of painful gastric tumors by hypodermic injections of Thiosinamin. J. F. Macdonald, M. D., Hopewell, N. S.

Treatment of acute inflammatory diseases of the throat by hypodermic injections of Atropine. J. F. Macdonald, M. D., Hopewell, N. S.

Interesting notes on midwifery work. W. S. Muir, M. D., Truro, N. S.

Extrauterine Pregnancy, with report of cases. M. Chisholm, M. D., Halifax, N. S.

Experiences in quarantine with nine hundred emigrants at Lawlor's Island. G. Carleton Jones, M. D., Halifax, N. S.

Trephining for Epilepsy, with report of a case. E. Farrell, M. D., Halifax, N. S.

Papers will also be read by Drs. J. W. Daniel, Murray Maclaren, T. D. Walker and J. H. Morrison, St. John, and Dr. W. H. Hattie, Halifax.

Society Meetings.

ST. JOHN MEDICAL SOCIETY.

APRIL 6, 1898.—Dr. G. A. B. ADDY, Vice-President, in the chair.

The chairman exhibited the brain and membranes, lungs, uterus with appendages, and heart of a middle-aged woman.

The brain showed an area of softening about the ascending frontal convolution and adjoining portions of the middle and inferior frontal lobes. The dura mater was adherent over this region and much thickened. There was a small ovarian cyst, and the heart had an ante-mortem clot in the left ventricle. The lungs contained scattered tubercular nodules and the bases were congested.

Drs. T. D. Walker and F. MacFarlane detailed the clinical symptoms. The woman had suffered from epilepsy for years, and was mentally weak.

APRIL 13.—Dr. W. W. WHITE, President, in the chair.

A paper on "The General Treatment of Dyspepsia" was read by Dr. Doherty. Success of the special treatment was influenced largely by the general management of the patient. Attention must be paid to the general health, *e. g.*, anæmia. The quantity of food taken is important, for there may be a tendency to over-eating, or, as is frequently the case, an inadequate diet is taken. Hygienic treatment is to be observed, including exercise, fresh air, or rest in bed. The temperament must influence treatment, the benefit of bromides in nervous dyspepsia being a familiar example.

APRIL 20.—"Nasal polypus."—A specimen weighing an ounce was shown by Dr. Crawford.

"Chronic Pharyngitis."—Dr. J. H. Morrison read a paper on the above subject. The disease is most common on the sea-shore and in moist climates, and is due to the same causes as set up inflammation of the nasal passages. Each case demands an examination of the nose and naso-pharynx. The primary seat of irritation should be found and receive attention, such as acrid discharge from the nose, enlarged tonsils and nasal spurs. Then destroy the hypertrophied follicles and the enlarged veins which run into them, preferably with the electric cautery. In cases where crusts form on the pharynx, alkaline solutions should be used.

APRIL 27.—Dr. Crawford referred to satisfactory results which he had obtained in a case of tubercular laryngitis from the insufflations of orthoform.

Drs. Scammell and G. A. B. Addy reported experience in the administration of ether by the drop method; the patient being first anæsthetised in the usual way—the anæsthesia being continued by dropping ether on a chloroform inhaler. The results were very satisfactory and the method entailed the use of a very moderate amount of ether.

An invitation was read by Dr. Inches from the American Medical Association, inviting the members of the Canada Medical Association to the annual meeting to be held at Denver on June 7th to 10th.

MAY 4.—Dr. G. A. B. ADDY, Vice-President, in the chair.

This regular meeting was held at the quarantine station, Partridge Island, an invitation having previously been extended to the society by the Quarantine Medical Officer, Dr. March. Seventeen members were present, having been conveyed to the island in a steam launch kindly provided by Dr. March.

The sterilizing and disinfecting apparatus was first inspected and the method of working demonstrated. Then the members were entertained to a very excellent supper, and later an introductory paper was read by Dr. March, entitled "Tuberculosis and the Forecastle."

Dr. March's attention was drawn to this subject about three years ago, and since that time he has noted 79 cases of well marked phthisis among seamen—26 cases in the first year, 22 in the second, and 31 in the third. He pointed out that this was a matter of sufficient importance to demand not only attention but a strong line of action by the proper authorities. He also spoke of the difficulty arising in many ways of doing so, the course to be taken by the quarantine officer when he meets the disease on ship-board, in the crew or among the passengers, having hitherto not been sharply or at all defined. The large proportion of Norwegians that were found affected ($\frac{1}{3}$) was probably due to the fact that they were usually afloat in the older vessels, where the chance of becoming infected was greater than in new ships, and also because the bacillus can exist indefinitely on the surface of the damp clothes always found in the fore-castle.

Inquiries from several hospitals which were credited by the Auditor General in his report for 1897, with a total of over 200 days each, gave the following percentage of time spent in the marine hospitals by sailors affected with tuberculosis:

St. John—G. P. H.	3.98	Springhill—Cottage.....	32.69
Halifax—Victoria.....	5.80	Chicoutimi—Hotel Dieu....	32.89
Montreal—Notre Dame.....	6.70	Mirimachi—Marine	33.05
Charlottetown—G. & M.	21.37	Yarmouth— “	39.12
St. Catherine— “	21.72	Lunenburg— “	47.75

The average of these hospitals—the only hospitals which have reported—is 26.50 per cent., practically one-fourth of all the time, and the estimated cost to the Marine Department for the care alone of reported cases is \$10,000.

Dr. March suggested that the hospitals reporting less than 10 per cent. either had not had a representative year, or that all the cases of tuberculosis entering them were not recorded as such, but were euphemistically diagnosed to give the patient the prop of hope. Making allowance for this, he thought he might fairly make an average of 32.65%, or practically one-third of all the time. \$40,000 was spent last year by the Dominion Government in the care of sick seamen, and probably \$15,000 of this amount was for treatment of consumptives, and he maintained this might have been as well if not better done and quite as cheaply in special sanatoria, thus relieving the general hospitals of such cases and at the same time educating the country in the sanitary conditions required in the treatment of this disease.

During the last eight years, 1,023,514 deaths took place in the United States from tuberculosis. If the proportion is the same in Canada, it gives a death rate of 10,662 per annum. These lives, valued at \$100 each, and their expenses during illness at another \$100, would give an annual loss of \$2,132,400, which capitalized would be worth over \$70,000,000. These figures are within the mark, for Dr. Bryce makes the economic loss to the Province of Ontario alone, from tuberculosis, much greater than this.

These figures, however, if they be not exact, are at any rate enormous, and show the condition to be a national one. And as the right to deal with such matters lies with the Federal Government, it is therefore its duty to intervene and give relief. In practice, however, the control of the general health is divided among Federal, Provincial and Municipal authorities.

Dr. March, nevertheless, maintained that the right to deal with tuberculosis in a general, summary and effective way is national in its character, and entails a national responsibility. He thought that the quarantine officers of Canada should be instructed to see that no more

tuberculosis is permitted to enter the country in ships, unless under surveillance or for treatment in special sanatoria. In other words, tuberculosis should be scheduled as a quarantineable disease, and, as it is both infectious and communicable, it should be treated by the potent forces of isolation and disinfection.

Discussion.—Dr. Daniel said that much credit was due to Dr. March for his study of tuberculosis among seamen and his pointing out the danger of the fore-castle as the means of infecting healthy seamen with tubercle. The importance of disinfection of clothing and fore-castle was evident. He considered that the provincial control in health matters was greater than set forth by the reader of the paper, and also that statistics from the smaller hospitals were liable to give erroneous impressions, if treated in the same way as those from large institutions.

The discussion was continued by Drs. Bruce, Morrison and Wetmore, and adjourned to the next meeting. (*Vide infra.*)

Not only was the visit a pleasant outing, but was of much scientific value and interest.

MAY 11.—A male patient operated upon for varicose veins was exhibited by Dr. Murray MacLaren. The veins had been greatly enlarged and present from childhood. Both legs were about equally involved. The method of operation pursued, with apparently good results, was that of Phelps, by subcutaneous catgut ligatures placed at intervals between one and two inches along the veins.

Dr. MacLaren also showed a large abscess of one ovary and cyst of the other ovary, removed from a young woman.

The discussion on "Tuberculosis and the Fore-castle" was continued and taken part in by Drs. Morrison, T. D. Walker, Inches, Hetherington, Christie, Doherty, Wheeler, Crawford and MacLaren, the general view being that the subject was of great importance and the author was heartily congratulated on his work.

Referring to the foregoing report of Dr. March's paper, and the discussion following its reading, we have much pleasure in publishing the following addendum, for which we are indebted to Dr. March:—

"The percentages of time in hospital were given to show that the government was actually at considerable expense on account of consumption among sailors, and the deduction was that these cases could be as cheaply and better taken care of in special sanatoria.

It should be borne in mind that many sailors are discharged in Canadian ports, and many leave their vessels without discharge on account of illness.

Some of these find their way into Canadian hospitals, and, being unable to secure the necessary certificate which would entitle them to treatment as sick mariners, they are treated gratuitously. No attempt was made to get at the cases of tuberculosis among these. If they had been counted and their time added in, the percentages, and particularly those of city hospitals, would have been much larger.

This will be readily admitted by those having the financial arrangements of these hospitals in charge.

However, perhaps we shall get at this by-and-bye. The points I particularly desire to bring out in my paper, (and on most of them there seems to be an agreement of opinion), are :—

1. The enormous economic loss sustained by Canada on account of tuberculosis.
2. That sailors are subject to it.
3. That it is infectious and communicable.
4. That its cause and methods of propagation are known.
5. That it is eradicable.
6. That the Dominion Government has the right to deal with it, if it desires to do so.
7. That this right carries with it a grave responsibility.
8. That so far as quarantine is concerned this responsibility should be immediately recognized.
9. And that, if we longer tolerate its introduction into the country, we must do so with our eyes open.

NOVA SCOTIA BRANCH BRITISH MEDICAL ASSOCIATION.

JAN. 7, 1898.—Dr. D. A. Campbell read an interesting paper on "The Relationship of Pleurisy with Effusion to Tuberculosis."

Dr. Goodwin referred to a case of phthisis he had been attending whose wife had nursed her husband very carefully, one day complained of pain in the side. On careful examination nothing abnormal was found. Next day, however, there was distinct effusion which disappeared under treatment. He had no further history of the patient, but in view of what Dr. Campbell had stated he would find out more about the case. He then referred to the views of Jacoud of Paris, who regards certain cases of dry pleurisy as tubercular.

Surgeon-Major Moir spoke of the number of cases coming to the Military Hospital with pleurisy who subsequently returned with symptoms of tuberculosis. He had noticed in these cases a particular kind

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of frothy mucus and asked Dr. Campbell if he had noticed anything about the sputum.

Dr. Campbell replied that he had not.

Dr. Chisholm said he had lately been noticing the relationship between the two conditions. He spoke of a case in the Victoria General Hospital who refused aspiration, and though warned of the danger had sat up and died. In this case there were undoubted cicatrices in the lungs. He did not know if there was a direct relationship between the tuberculosis and the pleurisy. Another case he quoted was one of serous effusion in left side. He was aspirated and made a good recovery, but the patient died a year afterwards of tuberculosis. Now that attention was drawn to the matter he supposed that every case of pleurisy with effusion would be put down as tubercular. He did not see why we should not have simple inflammation of the pleura as seen complicating la grippe. If la grippe be a cause, then there must be other causes besides tuberculosis. It is not rational to put every case down to tuberculosis.

Dr. Campbell said he did not take that ground, but only referred to cases in which there was no such cause as Dr. Chisholm mentioned.

Dr. Chisholm, continuing, said that as regards treatment he recommended the injection of iodine after aspiration, in order to set up inflammation to promote absorption of the exudation. He referred to a case in the Victoria General Hospital who after repeated aspirations it still returned. He then injected half an ounce of tincture of iodine and the immediate effect was remarkable. The skin over that side of the chest turned purple. The solution was at once withdrawn. The case was not cured, but the period of return of the effusion was much increased and he thought there was a marked beneficial effect in this case.

The President thought that it would be interesting if Dr. Campbell would give the pathology of this condition. He supposed that the theory was that infection took place by inhalation. Then why should the pleura be affected and not the lung?

Dr. Campbell explained that this was caused by infection through the lymph channels.

Dr. Farrell said that he did not fear that the theory would go too far, in fact he doubted if it would go far enough. He could call to mind a number of cases beginning as pleurisy and ending in tuberculosis. He thought he could explain it in this way:—the means of infection are always about us; under normal circumstances our resisting powers are

too great, and therefore we do not contract the disease when exposed to the germs. It seemed to him that the relationship could be easily explained, the relationship of exciting and predisposing causes. As an example, we have cancer of the lower lip from irritation of the pipe lowering the vitality and resisting power of the tissue. In tubercle we know that infection does not occur in healthy tissue. But pleurisy may only hold the same relationship to tubercle as does bronchitis or pneumonia. The fact that a pleurisy occurs, simply lowers the vitality and resisting powers of the tissues, and infection by tubercle results. Another point was then referred to in which he stated that when the pus germ can exert its ability, it is able to destroy the tubercle bacillus. One case of his, where there was a deposit in the lung, and had been under treatment for a few months as an undoubted case of tuberculosis, took a fresh cold and developed pleurisy with effusion, subsequently becoming an empyema. The chest was opened in the ordinary way and a good recovery obtained in about a year, the patient now being a strong, healthy young man of twenty-seven. He thought if the pus germs were not able to destroy the tubercle bacillus in the lungs, in the pleura they were capable of doing so.

Dr. Goodwin referred to the views of Austin Flint, Jr., who was directly opposed to the ideas brought forward by Dr. Campbell.

Dr. Campbell said he did not want to take serious issue with Dr. Farrell, whose point was well taken. He did not know Dr. Farrell's views as to inflammation in general, but he thought he (Dr. F.) accepted the view that we can find no inflammation produced without the intervention of a microorganism. It was well known that surgeons and physicians hold somewhat different ideas as to what should come under inflammation, the former holding somewhat narrower views. Taking erysipelas, a disease which can be reviewed from a medical and surgical standpoint, the time was not very remote when cold and exposure were looked upon as factors, but now in all cases it can be demonstrated as due to a microorganism. Pleurisy is an inflammation, and there is a tendency amongst physicians to exclude such vague causes as cold, etc., and are led to look upon inflammation as the invasion of some microorganisms, some of which have not yet been demonstrated. There has been some attempt to classify diseases on an etiological basis, with varying success. We can classify purulent pleurisy according to the microorganism present, but in serious effusions we lack the evidence we can get in purulent ones. In many cases microorganisms can be demon-

strated, and in other cases none. In certain forms if we could bring about conditions which Dr. Farrell referred to we might resort to such a plan of treatment.

Dr. Farrell referred Dr. Campbell to his paper and thought his position somewhat inconsistent, for in it he had referred to cold as a cause of idiopathic pleurisy. His idea of inflammation was that it is a battle between vital forces and any injury produced to a tissue, or any microorganism. In the case of injury it is an effort of nature to repair. Take two varieties as they occur in the finger:—first the simple whitlow that we know is an inflammation due to germ infection; secondly, if a perfectly clean finger be exposed to heat and burnt, the same inflammation is produced and runs the same course as the slight “run around.” If Dr. Campbell claims that we must seek for a microorganism as the cause, he (Dr. F.) did not hold to that theory. Take also a real idiopathic inflammation like coryza resulting from sitting in a draught. He was quite in accord with Dr. Campbell when he said that a large majority of these inflammations are due to a germ, but we cannot account for all of them.

Dr. Campbell, in reply, said he thought there was no difference of opinion as to the definition of inflammation. He would not go so far as to say that in all inflammations a microorganism had been introduced. There were certain mechanical irritants, certain chemical substances, such as croton oil, capable of producing cell death, but in the great bulk of cases the irritant is a microorganism and the citation of certain instances otherwise producing inflammation does not vitiate that statement to any great extent.



Matters Personal and Impersonal.

Dr. G. Carleton Jones, of Halifax, has been gazetted medical examiner for this district for the Royal Military College, Kingston.

Dr. Smith, of Mill Village, has been appointed port medical officer at Port Medway.

The NEWS is delighted to extend congratulations to Dr. J. W. MacKay, of New Glasgow, who on May 25th joined forces with the noble army of Benedicts. Dr. MacKay is one of the most popular and most successful of the fine body of men who represent the profession in the eastern portion of the province. His bride is a daughter of Mr. Graham Fraser, Nova Scotia's "iron king."

The annual report of the Prince Edward Island Hospital for the Insane for 1897 is an interesting pamphlet. Every year more room is demanded in the different institutions of this kind throughout Canada, and the expense of supporting 12,000 insane through the Dominion at a yearly expense of 1,724,000 is rather alarming. The percentage of cures on the cases admitted in the P. E. I. institution is very creditable to Dr. Blanchard and the other officials.

Dr. Geo. G. Melvin just returned from London by the "Halifax City" and will settle at St. John. The NEWS wishes the Doctor every success.



Book Reviews.

INTERNATIONAL CLINICS.—A quarterly of clinical lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology and Dermatology, and specially prepared articles on treatment and drugs. By Professors and Lecturers in the leading Medical Colleges of the United States, Germany, Austria, France, Great Britain and Canada. Edited by Judson Daland, M. D., Philadelphia; J. Mitchell Bruce, M. D., F. R. C. P., London, Eng.; and David W. Finlay, M. D., F. R. C. P., Aberdeen, Scotland. Volume I., eighth series, 1898. Published by J. B. Lippincott Company, Philadelphia. Canadian representative, Charles Roberts, 593 A Cadieux St., Montreal.

The first volume of a new series of this very excellent periodical is before us, and fully maintains the high reputation which it has won for

itself. We doubt if any publication in the interests of the physician is of greater practical utility than is this quarterly. Certainly none presents to the reader a greater variety of instruction or more readable matter.

The first article in the present volume is by Prof. Jacoud, and deals with the Contra-indications to the use of Salicylate of Sodium in the Visceral Manifestations of Acute Inflammatory Rheumatism. He considers that on the appearance of any cerebral manifestation, or of any cardiac or cardio-pulmonary localizations, there should be immediate stoppage of salicylates and other treatment should be substituted therefor. He makes no suggestions, however, as to what lines of treatment should be adopted.

In the second article, "Digitalis as a Diuretic," Dr. Tirard urges against the indiscriminate use of digitalis in kidney disease. Its employment must be determined by the recognition of cardiac weakness rather than upon a diseased condition of the kidney.

It is impossible in the short space available for review to mention even the titles of the many lectures included in the volume, and, of course, opinion as to their relative merit is so much a question of individual judgment that we forbear expressing ourselves. Ballantyne has a lecture on Placenta Prævia. Biss and Hayem have each a lecture on Chlorosis, the former advocating as *the* drug iron carbonate, of which he gives 20 grains in pill three times daily, while the latter advocates in preference the protoxalate of iron, two or three grains, at the most, twice a day. Myocarditis is dealt with by Prof. Von Leyden; Enlargements of the Spleen, by Dr. Norman Bridge; Aneurism of the Abdominal Aorta, by Dr. I. N. Love; Tubercular Pleurisy, by Dr. J. O. Hirschfelder. Altogether 39 lectures are presented, all by men of eminence and all dealing with subjects practical to every general physician. The volume comprises 355 pages, and is published in a style highly creditable to the printers' art.

THE INTERNATIONAL MEDICAL ANNUAL, 1898. Sixteenth year. E. R. Treat & Co., Publishers, New York. Price \$2.75.

The Medical Annual for 1898 comes to us as a welcome visitor. Each department as usual is edited by a well-recognized authority in his own particular sphere. Murrell again writes on a "Review of Therapeutics," his name being sufficient guarantee that only drugs that are known to be of any therapeutic value are mentioned. Hurry Fenwick once more

looks after the department in which he is recognized as one of the leading authorities, viz. : genito-urinary surgery. The last literary work that Parvin wrote is contained in the present Annual, though he did not live to read in this volume the pages which were his final contribution to medical literature. The illustrations are admirable, those showing the use of the Roentgen rays in the surgery of the kidney, being particularly interesting. It is not necessary to elaborate on the value of this book, as every practitioner who regularly receives it knows that its pages are filled with up-to-date information. Any physician who does not subscribe to the Annual is only standing in his own light.

BOOKS OF THE MONTH.

A MANUAL OF HYGIENE AND SANITATION.—By Seneca Egbert, A. M., M. D. 12 mo., pp. 360, 63 illustrations. Cloth, \$2.25 net. Published by Lea Brothers & Co., Philadelphia and New York.

ATLAS OF LEGAL MEDICINE, by Dr. E. VonHofmann. Authorized translation from the German. Edited by Frederick Peterson, M. D., assisted by Aloysius O. J. Kelly, M. D. 56 colored plates and 193 illustrations in black. Price \$3.50 net. Published by W. B. Saunders, Philadelphia.

ATLAS AND ABSTRACT OF THE DISEASES OF THE LARYNX, by Dr. L. Grunwald. Authorized translation from the German. Edited by Chas. P. Grayson, M. D. 107 colored figures on 44 plates. Price \$2.50 net. Published by W. B. Saunders, Philadelphia.

PAMPHLETS RECEIVED.

A Preliminary Report on a Method of Overcoming High Resistance in Crooks' Tubes. By Wm. W. Graves, M. D. Reprint from *American X-Ray Journal*.

A Clinical Study of Kryofine. By Sidney V. Haas, M. D., and J. Bennett Morrison, M. D. Reprint from *N. Y. Med. Journal*.

Neurotic Eczema. By L. Duncan Bulkley, A. M., M. D. Reprint from *Jour. Am. Med. Assoc.*

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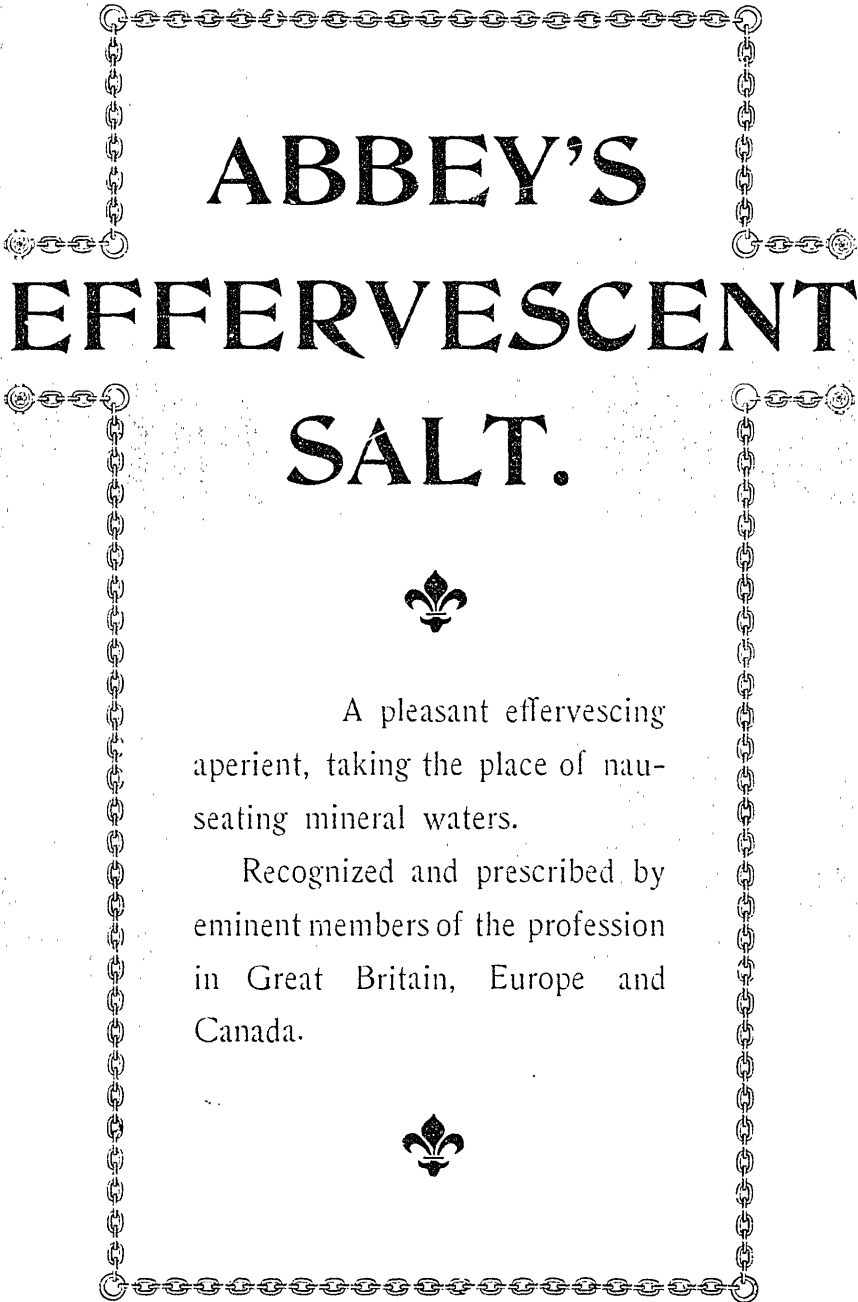
MALTINE WITH COCA WINE

Dr. C. H. BROWN, of New York, Editor of the *Journal of Nervous and Mental Diseases*, says :

"Maltine with Coca Wine has served me well in cases of Neurasthenia from any cause. It serves as a most excellent sustainer and bracer. Besides these two essential qualities, we are forced to believe in another element in this combination, and that is the sedative quality which makes it a most valuable therapeutic desideratum. This action does not depend entirely upon the Coca, or the Coca in combination with wine. My conviction is that the Maltine plays a leading part in this triple alliance."

SAMPLES SENT PHYSICIANS ON APPLICATION.

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THEIR CANADIAN BRANCHES—WALKERVILLE AND MONTREAL.

It is no exaggeration, it is merely stating a well-known fact, to say that the house of Parke, Davis & Co. is the "foremost pharmaceutical house in all the world." Its prominent position has been attained by steady adherence to scientific methods and to the policy that *quality* and *reliability* should be synonymous with their label.

Parke, Davis & Co. have always led in the advance-guard of scientific pharmacy. The improvements which they have effected in pharmaceutical preparations have done much to place the science and art of medicine on a surer and more definite basis, and humanity has been correspondingly benefited. Parke, Davis & Co., for instance, was the first house to advocate the principle of standardization as applied to the preparations of drugs containing alkaloids, etc., that were capable of being chemically assayed. They were the first to place standardized preparations of such drugs upon the market, and the medical profession so warmly endorsed their action in this respect that the last revisers of the United States Pharmacopœia felt constrained to fall into line and give official recognition and approval to the principle.

Chemical standardization alone, however, does not represent the ultima thule of this matter. There are some drugs, such as Indian cannabis, digitalis, strophanthus, squill, cantharides, ergot, etc., that cannot be satisfactorily standardized by chemical test. Parke, Davis & Co. now stand as the first advocates for the further application of the principle of standardization to these, which can only be done satisfactorily by test upon living organisms, *by physiologic test*.

It is not our intention to here picture the magnificent biological laboratory which Parke, Davis & Co. have erected to efficiently prosecute the standardization by physiologic test of the drugs above referred to. It is rather as an illustration of the progressive methods characteristic of the firm's policy, explanatory of the unqualified praise which is accorded to their products wherever they go. The medical men who use Parke, Davis & Co.'s preparations know that in them they possess the

most reliable, up-to-date, scientific instruments of materia medica. The key-note of the ever-increasing favor, therefore, which compels Parke, Davis & Co. to keep enlarging their manufacturing facilities, to multiply their branch houses and their agencies, is typified in their trade-mark, "*Medicamenta Vera.*"

WALKERVILLE BRANCH.

The establishment of the Walkerville, Ont. branch laboratory of Parke, Davis & Co. is only one of many instances which go to show the wonderful growth and expansion that is steadily marking the career of this great firm. Appreciating the favor which had already been manifested towards their products, Parke, Davis & Co. decided to meet the demand for them by a purely Canadian enterprise which would be able on Canadian soil to operate under much more favorable commercial conditions. Accordingly, in 1887, they erected a modest building, which was estimated to be sufficient for their Canadian trade at that time and also for some time to come. The very encouraging success which immediately attended this effort made it at once apparent that a larger building was necessary, and in 1890 they moved to a large, handsome new laboratory. Now a third enlargement of premises has been found necessary to meet the rapid development of their Canadian trade, and an additional two and a quarter acres of land have been added. On this is now in course of construction a four-story building 60 by 100 feet that will give, with other minor improvements, 25,000 additional feet of needed floor space. This will then yield employment to about 125 people, exclusive of their ten travelling representatives who are scattered all over the Dominion.

In the Walkerville laboratory of Parke, Davis & Co. every preparation receives the same care, is brought up to the same standard, must respond to the same tests, as those emanating from the huge parent laboratory in Detroit. Their preparations may be relied upon in precisely similar conditions to yield precisely similar results, since all chemie and physiologic tests are identical in the control of their manufacture. In only one series of preparations has it been considered inadvisable to duplicate manufacturing facilities, and that is in the preparation of anti-diphtheritic serum; this is still manufactured exclusively in Detroit. All crude drugs purchased after a physiologic test of submitted sample are procured through the Detroit laboratory in order to insure the animal tests being uniformly applied. With access to the same staff of chemical

and botanical experts, which has helped so materially to build and maintain the reputation of the parent firm, it can readily be assumed that the products of the Walkerville manufacturing branch may be relied on as fully as those issuing from the Detroit laboratory on the opposite side of the magnificent river upon which they both stand.

MONTREAL BRANCH.

So much delay has been complained of in shipments to eastern Canada that Parke, Davis & Co. have often been strongly urged to establish a depot or branch which would serve as a distributing centre on or near the Atlantic coast. Since the transit delay was ascertained to be located chiefly between Walkerville and Montreal, they decided that a branch house in the latter city was almost a necessity, and that its establishment would afford tangible relief to a large number of patrons in the eastern part of Ontario, the province of Quebec and the maritime provinces. The branch is located in the center of the wholesale district of Montreal, No. 378 St. Paul Street, and will carry a *complete* stock of Parke, Davis & Co.'s preparations, although for the present it will not be a manufacturing laboratory. It is recommended as a base of supplies to all those living sufficiently near Montreal to expect a lessened time of transit in their shipments than would be the case if ordered from Walkerville.

Speaking of Canadian trade brings to notice the other evidences of high appreciation which Parke, Davis & Co.'s products receive from the medical men who are subjects of Queen Victoria. As a profession they are second to none in the world, and there are none who more carefully scrutinize, more carefully examine and test their preparations nor who afterwards more thoroughly endorse them. A large manufacturing laboratory is maintained in London, Eng., at 21 N. Audley St. (451 Oxford St.), Grosvenor Sq. W., which has been steadily increasing its plant, and its products meeting with increased favor ever since its installation. Not only have Parke, Davis & Co. a large demand for their preparations in Great Britain alone, but from the remotest corners of the globe have come most unexpected demands for them—in fact, from wherever an educated physician is to be found. They experience constantly opening new and unlooked-for channels of export for their goods, and even a partial list of their branch establishments and agencies is a formidable one. Parke, Davis & Co. maintain a special corps of traveling representatives in Australasia, and they have no less than fourteen

depots for the supply of their products in that remote continental island. In New Zealand they have seven. In British India they have five (one of these being in Ceylon). In the Hawaiian Island they have three, and in China, two. On the continent of Europe they have six. Other countries where but one agency or depot is maintained, are Egypt, Japan and Java. This is not inclusive of a large number of wholesale houses in Mexico, Central and South America and the West Indies, who carry their products in stock.

In New York City, Parke, Davis & Co., do an immense distributing business; here also they conduct a special and distinct enterprise, their Crude Drug Department, which does a vast importing and jobbing business in medicinal herbs, barks, leaves, resins, insect powder, etc. Wherever they have established branches in the United States their business has advanced with the same rapid strides which have characterized their Canadian trade. They have also large and completely equipped stocks located in Kansas City, New Orleans and Baltimore. Last but certainly not least is their immense

DETROIT LABORATORY.

Here is located the large staff of scientific experts, analytical chemists, physicians, microscopists, botanists, etc., whose controlling influence ramifies to the remotest circumference of the vast business.

When the Ontario Medical Association visited the establishment of Parke, Davis & Co. a year or two ago, its members were particularly impressed with the completeness and magnitude of the bacteriological and pharmacological laboratories. These have since been increased five-fold in capacity and outfit! Here was made the first American diphtheria antitoxin that was offered on this side of the Atlantic. Their superior product of this article—the finest in the world—is well worthy of the immense department which was equipped for this special purpose. Provided with all modern paraphernalia, powerful microscopes, huge incubators, sterilizing apparatus, extensive stables and animal laboratories, this branch of enterprise is prepared to keep abreast of the latest discoveries in bacteriological science. They are now engaged in the production of several antitoxins—of diphtheria, tetanus, streptococcus, etc. Their diphtheria antitoxin enjoys the enviable distinction of never having caused a fatality or serious casualty of any kind and its record in reducing the mortality of this dread disease is unparalleled by any other similar preparation on the market. About one hundred an fifty

horses are at the present time undergoing the immunizing treatment for its production. In addition there are several thousand guinea pigs, etc., which are used as control indicators of the potency of the toxins and antitoxins.

A new department is being added in the shape of a vaccine farm. Shortly Parke, Davis & Co. expects to be able to furnish an unexceptional virus and the plant and facilities now being intalled for this purpose are unsurpassed.

Here is also located the pharmacological laboratory where physiologic assay of the powerful drugs such as ergot, strophanthus, Indian cannabis, digitalis, etc., is made. Not an ounce of any preparation of these leaves the laboratories of either Walkerville or Detroit without undergoing crucial trial and receiving a positive guarantee of its medicinal activity.

All these departments, bacteriological, physiological and vaccine farm are under the care of Prof. E. A. Grange, late State Veterinarian of Michigan, whose undoubted ability and experience gives assurance that no expense or care will be spared for the proper observance of hygienic conditions in the stables and laboratories.

The enterprise which this firm has shown in the introduction of new remedies is evidenced by a partial list of its earlier efforts in this direction. Such drugs as the following are now recognized as valuable members of the materia medica,—cascara sagrada, jamaica dogwood, jaborandi, grindelia, coca, kola, berberis aquifolium, corn-silk, quebracho—yet they were not known to the medical profession until introduced by the preparations of Parke, Davis & Co.

The price list of this house, of which a new edition will be mailed in July or August, comprises thirty distinct lines of pharmaceutical preparations and five thousand items. There are one hundred and thirty representatives of the firm travelling over every continent and every clime in addition to those we have mentioned above as strictly Canadian. Despite the hard times which have so generally prevailed the last few years, Parke, Davis & Co. have been steadily adding to their huge travelling staff, opening new branch houses, building new laboratories by the acre and essaying every promising line of scientific enterprise. They have committed themselves to an aggressive policy of advancement all along the line, and it remains but to say that their desire to raise pharmacy and therapeutics to higher levels is almost daily receiving the endorsement of the best and most thoughtful men engaged in this practise.

THE PROPER TREATMENT OF HEADACHES.—J. Stewart Norwell, M. B., C. M., B. Sc., House Surgeon in Royal Infirmary, Edinburgh, Scotland, in an original article written especially for *Medical Reprints*, London, Eng., reports a number of cases of headache successfully treated, and terminates his article in the following language:—

“One could multiply similar cases, but these will suffice to illustrate the effects of antikamnia in the treatment of various headaches, and to warrant the following conclusions I have reached with regard to its use, viz. :—

- (a) It is a specific for almost every kind of headache.
- (b) It acts with wonderful rapidity.
- (c) The dosage is small.
- (d) The dangerous after-effects so commonly attendant on the use of many other analgesics are entirely absent.
- (e) It can therefore be safely put into the hands of patients for use without personal supervision.
- (f) It can be very easily taken, being practically tasteless.”

SANMETTO THE STANDARD PREPARATION FOR GENITO-URINARY DISEASES.—For some years I have been a very warm admirer of sanmetto, and have found its action marked and well defined in the cases wherein I have used it. In cases of prostatitis, with loss of virile power in elderly men I find its action superb. In chronic specific urethritis, cystitis and all irritable conditions of the urinary tract I find sanmetto very efficacious. I do not hesitate to recommend it as a standard preparation in cases where the action of pure santal and saw-palmetto is indicated.

Durand, Mich.

JOS. MARSHALL, M. D.

MESSRS. SIMSON BROS. & Co. call attention in this issue to their Lithiated Lime Juice as a remedy for rheumatic and gouty affections. The combination certainly should be a good one. They have been making this for some years, but of late are pushing it more. Simson Bros. & Co. hold the reputation of being the largest refiners of Lime Juice in America.

MESSRS WYETH BROS. have lately put on the market a new preparation of iron and manganese which they name Liquor Mangano-Ferri Peptonatus, Wyeth. From its composition, and especially on account of its combination with peptone, evidently much of the labor of the stomach is saved. It would be advisable for physicians to give it a trial in anæmia, chlorosis and any debilitated state of the system.

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known to the medical profession. Highly recommended in the Ailments of Woman and Children, particularly in cases of Dysmenorrhœa, Amenorrhœa, Menorrhagia, Dangerous Flooding, Threatened Abortion, Sterility, The Menopause, and in all stages of labor it is indispensable.

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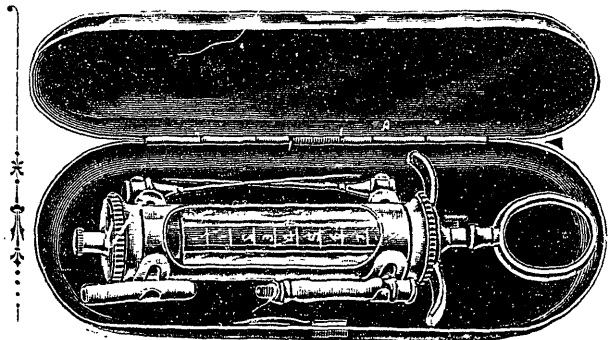
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DOSE:—One Teaspoonful Four Times a Day.

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The special indication of this combination is Phosphate in Spinal Affections, Caries, Necrosis, Un-
united Fractures, Marasmus, Poorly Developed Children, Retarded Dentition, Alcohol, Opium, Tobacco Habits
Gestation and Lactation to promote Development, etc., and as a *physiological restorative* in Sexual De-
bility, and all used-up conditions of the Nervous system should receive the careful attention of therapeutists.

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age of benefit in Consumption and all Wasting Diseases, *by determining the perfect digestion and as-*
similation of food. When using it, Cod Liver Oil may be taken without repugnance. It renders success
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students are admitted under the three-years' system. Graduates of other accredited Medical Colleges are
admitted as third-year students. Students who have attended one full regular course at another
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are admitted to advanced standing for the second or third years, either on approved credentials from other
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The annual circular for 1898-9, giving full details of the curriculum for the four years, the Regents'
requirements for matriculation, requirements for graduation and other information, will be published in
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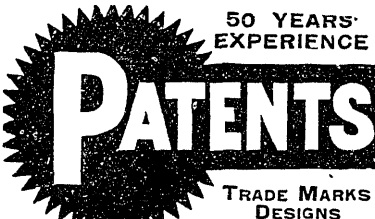
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Thirtieth Session, 1898-99.

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EDWARD FARRELL, M. D., Professor of Surgery and Clinical Surgery.
JOHN F. BLACK, M. D., Emeritus Professor of Surgery and Clinical Surgery.
GEORGE L. SINCLAIR, M. D., Professor of Nervous and Mental Diseases.
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ALBERT H. BUCKLEY, PH. M., Examiner in Mat. Med. and Botany.
FRANK SIMSON, PH. G., Examiner in Chemistry.

The Thirtieth Session will open on Wednesday, Oct. 2nd, 1898, and continue for the seven months following.

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(Pass in Inorganic Chemistry, Botany, Histology and Junior Anatomy.)

2ND YEAR.—Organic Chemistry, Anatomy, Practical Anatomy, Materia Medica, Physiology, Embryology, Pathological Histology, Practical Chemistry, Dispensary, Practical Materia Medica (Pass Primary M. D., C. M. examination.)

3RD YEAR.—Surgery, Medicine, Obstetrics, Medical Jurisprudence, Clinical Surgery, Clinical Medicine, Pathology, Bacteriology, Hospital, Practical Obstetrics, Therapeutics.

(Pass in Medical Jurisprudence, Pathology, Materia Medica and Therapeutics.)

4TH YEAR.—Surgery, Medicine, Gynecology and Diseases of Children, Ophthalmology, Clinical Medicine, Clinical Surgery, Practical Obstetrics, Hospital, Vaccination.

(Pass Final M. D., C. M. Exam.)

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