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CANADA
MEDICAL RECORD

FEBRUARY, 1902.

Original Communications.

RETROSPECT OF LARYNGOLOGY.

UNDER THE CHARGE OF

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TUBERCULAR LARYNGITIS.

St. Clair Thomson concludes an article on this subject as follows:—Early diagnosis can only be made by watching the development of successive pictures by prolonged observation, not that of to-day alone, but that of yesterday and to-morrow, in order to decide for or against laryngeal tubercle, including careful examination of the entire body.

Pathology and clinical experience show that in the majority of cases the focus of infection is near or in the crycoary tenoid joint. Early diagnosis should be made while the disease is in an incipient stage. Any persistent or suspicious laryngeal catarrh should be treated seriously. Once diagnosed the patient should be treated on the principles laid down in the modern method of sanitorium treatment. Symptomatic treatment should be directed to any irritative catarrhal or obstructive state of the air passages, and silence should be enjoined to rest the parts.

Ewart gives the result of protargol injections, and says the method has yielded by itself satisfactory results, but it is not claimed to be more than the first and most important instalment in an extensive system of active treatment. He

has found that ichthyol is the best internal remedy, although a place is still to be found for the old remedies as necessary adjuncts. The continuous inhalation of oxygen, for instance, is stated as compatible with the most useful forms of medication. Ichthyol is given after meals, a few drops in peppermint water with a daily increase of one minim till ten minims are taken. In some cases as much as twenty minims have been taken with advantage.

RONTGEN RAY IN THE DIAGNOSIS OF TUBERCLE OF LUNGS.

Bonnet-Leon publishes his results in diagnosis of pulmonary tuberculosis in early stage. In over 600 observations where he employed the fluorescent screen he was able to make a precise diagnosis of tuberculosis in 98 per cent. of the cases even at the commencement of the disease. In the very earliest stage a diagnosis could be arrived at by observing the diaphragm and the inspiratory muscles. Anomalies in the synchronism, or the amount of displacement of the two halves of the diaphragm, one might always diagnose a predisposition to tuberculosis or a commencing tuberculosis. In this way a number of persons apparently in good health had become suspected, in whom some months or years afterwards unmistakable evidence of this disease had manifested itself.

THE NASO-PHARYNX IN SCARLATINA.

Seibert says that to clean and to disinfect the infiltrated mucosa in the naso-pharyngitis of this disease, irrigations with 1 to 5 per cent. warm solutions of ichthyol, repeated every six hours, have been successfully used. A half pint is allowed to flow through the nares and the naso-pharynx from a fountain syringe suspended about three feet above the patient. When the infiltration is so far advanced as to obstruct the passage-way between the nose and throat, irrigations will be found insufficient, for the fluid then returns through the other nostril without coming in contact with this cavity. During the past year six cases of scarlatinous naso-pharyngitis, in which irrigations were insufficient, have been treated in a manner which readily overcame the obstruction; this consists of local applications of a 50 per cent. resorcin solution in alcohol. These resorcin-alcohol applications have

proved themselves to be perfectly harmless, and are indicated in scarlatina as soon as the naso-pharynx becomes involved.

CHLORIDE OF ETHYL IN NASAL SURGERY.

Mackie says this anaesthetic greatly simplifies and facilitates his work in nasal and throat treatment. Two thousand cases are quoted wherein it has been employed, in which no dangerous symptoms manifested themselves. He claims that if this anaesthetic is used carefully it is an ideal one for the narcosis of minor surgery. The principal advantage of it is the rapidity with which patients come under its influence, while the apparatus for giving it is not as cumbersome as that for nitrous oxide. Goldan, in the *Medical News* differs from these conclusions, but does not set forth the data furnished by Mackie.

ACUTE TONSILLITIS.

Floersheim claims remarkable results from the application of tincture of iodine in this disease. A camel's hair brush with the tincture is rapidly passed over all the inflamed area. Should intense burning result, a gargle of plain warm water is enough to relieve the condition. While, if no burning is felt, the remedy is applied a second time, from three to five minutes after the first application. The results are said to be marvellous, for in five minutes the pain and difficulty in swallowing are relieved. Ordinary measures were used subsequently, but in many cases it seemed to abort the trouble, and nothing else was done.

Selected Articles.

INFANT FEEDING.

"In reviewing the immense amount of literature which has accumulated on the subject of infant feeding we find that the superiority of breast feeding is acknowledged so generally that it may be said to have become a scientific truth. On the other hand, the opinions expressed regarding artificial feeding are so diverse, and so opposed to one

another, that it is evident that much which has for years been taught must be unlearned, or rather admitted to be untrue, before we can expect to make any intelligent advance in this most difficult subject."—*Rotch.*

In the decade which has elapsed since the above statement appeared (Cf. "Keating's *Cyclopædia of the Diseases of Children*," Vol. 1, 270) no subject has received greater attention at the hands of the profession, in the way of scientific study and clinical experiment, than has that of "infant feeding," whose generous bibliography is unequalled by that of any other branch of medicine; and, while important advances have been made in our knowledge of the composition and preparation of substitute foods, especially from a chemical and bacteriological standpoint, yet a critical review of recent text-books and magazine articles reveals the fact that the same diversity of opinion, regarding details in the methods of artificial feeding, exists to-day among specialists as well as the rank and file of the profession, as that which was complained of by Prof. Rotch ten years ago; therefore, we feel justified in heading our article with the above-quoted expression of this author's pessimistic views. In other words, we believe now as did he then, that much which has been taught and accepted as truth (even during the past ten years) "must be unlearned, or rather admitted to be untrue," ere we shall come to an intelligent understanding and agreement upon this important subject.

Concurrence of Opinions.—It is agreed that, inasmuch as breast milk is the child's natural food, it should serve as the standard by which to judge artificial foods; and it is the generally accepted opinion, that, if for any sufficient reason the babe cannot be nursed, the most practical substitute food is cow's milk. The only mooted question is—how shall it be prescribed? Regarding this point, there is great discordance of views; but we believe it is now admitted by pediatric specialists and by every general practitioner of experience that the milk should be diluted or modified so as to correspond as nearly as possible with mother's milk in the proportion and amount of its chief constituent parts—i. e., its proteids, fat and sugar. The analysis of breast milk shows that these three essential ingredients are present in the following approximate proportion: proteids 2, fat 4, sugar 7; while in cow's milk they are found as follows: proteids 4, fat 4, sugar 4½.

It will be seen that in modifying cow's milk the proteid must be reduced one-half by diluting the milk. This reduces the fat and sugar also. Hence fat and sugar must be added. The theoretical problem, therefore, is simple: Reduce the proteid by diluting the milk; increase the fat and sugar by adding those elements. To accomplish this purpose it has been customary to dilute one pint of milk with an equal quantity of water; but as the already deficient amount of sugar has then become still further reduced (to 2¼) the deficiency is made up by adding a tablespoonful of granulated sugar or milk sugar to one pint of the mixture. As fat has also been reduced one-half (to 2) a small quantity of cream is generally added.

Another point upon which physicians agree is, that milk from the herd is better than one cow's milk, on the ground that it is less likely to vary in its composition from day to day. Again, it is admitted that sanitary conditions should be insisted upon at the dairy and due precautions be taken to prevent bacterial infection. Not only should the cows be kept clean and healthy, but cleanliness should be observed by the men themselves at the time of the milking, while the various pails, cans, bottles, etc, should be made perfectly sterile. In other words the profession is now awakening to the importance of obtaining *clean milk*—that which is fresh from spore-bearing bacteria.

The majority of physicians are now convinced, from clinical experience, that diluted "condensed" milk is unfit for infant feeding—its prolonged use very frequently producing rickets. A dilution of 1 to 12, the one most commonly used, contains but ⅛ the amount of fat and ⅓ the amount of proteid of average breast milk. Double that strength contains but ¼ the proper amount of fat, but the amount of sugar is so excessive as to soon upset the stomach. It is evident, therefore, that a food so wide of the standard is not a proper one for the infant. The practice, too, observed now at some dairies, of using chemical preservatives in milk such as borax, boric acid, formaldehyde, etc.—is universally condemned as harmful.

Diversity of Views.—Concerning the best mode of modifying cow's milk so that it may resemble breast milk, not only in the proportion of its constituents, but in its digestibility—even our most eminent pediatricians are at loggerheads—one advocating "laboratory" and the other "home" modification, in both of which methods the strength

of the mixture may be varied according to the "percentage" of ingredients. Among those prominent in pedriatic circles who have advocated laboratory feeding will be found the names of Thomas, Meigs, Rotch, Zahorski, etc., while on the other hand, Crandall, Chapin, Fischer and others suggest certain methods of home-feeding which are considered equally scientific and far more practical.

It will be found, too, that while some authorities favour the adoption of a process which effectually destroys bacteria, and inhibits certain fermentative changes—i. e., by sterilizing, pasteurizing, etc.—the majority of specialists are opposed to this procedure and recommend feeding upon fresh "raw" milk, which has been immediately cooled and kept at a temperature below 50° F. Then, too, many physicians believe it is unwise to add to the mixture any ingredient (especially of a vegetable nature) not found in normal breast milk, while others recommend the employment of certain cereal infusions as diluents. Again, while certain proprietary milk-foods are advocated by the general practitioner, the majority of specialists condemn each and all such foods in unmeasured terms.

From the foregoing observations it will be seen that the problem of "infant-feeding" is still in a maze of doubt and perplexity, and the physician who is anxiously searching for the correct solution will be the greater confounded the more he investigates the subject. It is our purpose, therefore, to present as briefly as may be the suggestions offered by certain prominent specialists, whose opinions must command respect, and leave it to the judgment of each individual reader which method he selects as being likely to prove most effective in actual practice.

Laboratory Feeding.—Since the establishment of the first modified milk laboratory, in Boston, in 1891, similar laboratories have been established in twelve other cities of the United States, besides three in Canada and one in London. Under the management of Messrs. Walker and Gordon (whose names these institutions bear), working under the scientific direction of Prof. Rotch, the system has been developed to an extent little dreamed of in the beginning, so that it is now possible for a physician to obtain any combination he may wish, and to have his directions carried out with the same care and accuracy with which his prescriptions are filled at the drug store. That is to say, the different constituents of milk may be varied at pleasure according to

the judgment of the physician—accuracy in the modification being thus assured. The chief function of the laboratory, then, is to fill prescriptions calling for certain percentages of fat, sugar and proteids, or anything else which the physician may desire to add—*e. g.*, cereals, mineral matters, malt, pancreatin, patent foods, etc.,—or the milk may be ordered sterilized, pasteurized or raw.

The general principles to be observed in laboratory feeding are, of course, those of percentage feeding in general. The most important indications according to which the percentages of fat, sugar and proteids are to be varied may be summarized as follows: Habitual vomiting or regurgitation is almost always due to an excess of fat or to over-feeding; and, for an infant with such symptoms, the percentage of fat must be reduced as well as the quantity of milk. If the patient is not gaining in weight, and yet has no special signs of indigestion, the rule is to increase the percentages of all the ingredients. "Habitual colic," says Holt (Cf. *N. Y. Med. Jour.*, Jan. 12, 1901), "is nearly always from an excess of proteids. For such a condition one should not give more than one third as much proteids as fat, and usually at first very low percentages. This condition is commonly associated with the presence of curds in the stools, which requires the same treatment." For obstinate constipation increase both fat and proteids. Something should be said, however, regarding the changes required in milk modification during very hot weather. At such times both the proteids and fat must be reduced, but particularly the latter. It is seldom wise in any case, even with perfectly healthy children, to have the fat in the summer months over 3 per cent. and during short periods of excessive heat it should be reduced to 2 per cent. It is a good rule to begin with very young infants, with low percentages, especially of the proteids, which should not be above .50 per cent. for the first two weeks of life, and some authorities say .25 per cent. Fats and sugars should also be moderately low, about 2 per cent. for the former and 5 per cent. for the latter. Of course, much older children sometimes require these low percentages; but for a short time only.

Home Feeding.—The prime object in modifying milk is to obtain a mixture upon which the infant will thrive, and many prominent pediatrists have become satisfied from clinical experience that if care be taken to select good cow's milk, in which the growth of bacteria has been prevented by cooling, and due observance has been had in regard to

cleanliness, etc.—that the modification of milk (with reference to percentages) may be employed with the same accuracy and much more practically at the home of the patient by devoting attention to certain important points. It is well known, for instance, that the fat in milk, which has stood a short time, rises gradually toward the surface and eventually forms cream; so that there is a period during which the percentage of fat exists in regularly increasing ratio, advancing from the bottom toward the top. Advantage has been taken of this fact, and the following plan adopted for obtaining certain percentages:

The milk (rapidly cooled and strained after milking) is put in sterilized quart bottles, such as dairymen use, and kept so until used—standing in the ice-chest from 12 to 24 hours. The upper portion of the milk is now richest in fat, which has disseminated itself from below upwards, and any percentage desired may be calculated from the following table:

9	ounces	top	milk,	12	per cent.	fat,	4	per cent.	proteid.
11	"	"	"	10	"	"	4	"	"
15	"	"	"	8	"	"	4	"	"
20	"	"	"	6	"	"	4	"	"

The top 9 ounces (or more, as the case requires) of cream and milk are removed by using Chapin's one-ounce dipper; and, after proper dilution with water or otherwise and the addition of sugar, it is ready for feeding. If we wish to make a mixture containing proteid, fat and sugar, in the proportion of 2, 4, 7 (the proportion found in breast milk), we require a top milk containing twice the amount of fat desired—*i. e.*, 15 ounces top milk. The method, then, is exceedingly simple. The top fifteen ounces are dipped out, diluted one-half, and the required amount of sugar added (usually a tablespoonful to the pint or one ounce to twenty ounces of the mixture). The mixturethen contains proteid, fat and sugar in the proportion of 2, 4, 7.

The importance of procuring clean milk cannot be overestimated, and if the same care be taken that only the best shall be used, as is observed in the Walker-Gordon laboratories, there is no reason why the proportions should not be made as accurate in home-feeding as in laboratory feeding. The fitness of milk for infants' food depends largely on the percentage of lactic acid present and on the number of bacteria to the cubic centimetre. In the words of a prominent chemist: "Lactic acid is due to the 20 varieties of bacteria out of 200 that may be present in milk.

The lactic acid bacteria come from the teat of the cow, and can be largely eliminated by throwing away the first few streams when milking. Pathogenic bacteria get into the milk through the water used in cleaning the vessels or from persons who handle the milk. Putrefactive bacteria come from the manure. Great care should be taken in cleansing the udder and teats before milking, as well as the hands and finger nails of the milker, who should wear a duster over his working clothes. The stables should also be clean." The general practitioner is now awakening to the supreme importance of this subject, and the future is likely to witness improved methods in the production as well as in the distribution of milk throughout the country.

Sterilization.—Pediatrists are now practically agreed that sterilized milk is unfit to be used for any length of time as an infant's food; but the general practitioner, who is somewhat rusty in his chemical knowledge, has been slow to recognize the fallacy of the method, and many physicians have yet to learn that heating milk to a degree necessary to effect its sterilization (*i. e.*, to destroy existing bacteria) must necessarily produce chemical changes therein, which will seriously interfere with its nutritive properties as well as its digestibility. Recent investigations have shown that milk raised to a temperature of 100° C. is altered in the following particulars:

1. Its proteids are modified and rendered less digestible, *i. e.*, the lactalbumin and globulin are coagulated, and the casein so altered as to increase its resistance to the disintegrating action of the gastric ferments.

2. The combination of its saline ingredients with the proteids is more or less broken, and the salts assume a condition in which they are less readily absorbed, *i. e.*, the lactose is partially changed and the organic phosphorus is converted into an inorganic phosphate, both of which changes interfere with the digestibility of the milk. Wroblewski has shown, too, that certain of the calcium salts, necessary for the coagulation of the milk in the stomach (and which in raw milk are in a soluble state) are made to enter into insoluble combinations by a high temperature.

3. Natural ferments which are present in milk, and which naturally assist its digestion in the infant's stomach, are destroyed; Russell and Babcock having proved that unsterilized milk undergoes a self-digestion owing to the presence of a trypsine ferment readily destroyed by heat.

4. Alteration in the normal emulsion in the milk also takes place from the action of heat lessening its digestibility.

5. Observations point to the fact that immunity to disease may be conveyed through the mother's milk, and that such immunity—conferring substances (present in raw milk) are destroyed by a heat of 60° C. or over, thus rendering children, fed exclusively on milk sterilized at a high temperature, more liable to certain infections leading to disturbances in general nutrition.

6. Clinical experience has shown that such affections as scurvy and rickets, and other disorders of malnutrition, may result from a diet from which raw, fresh food is excluded.

In his work on "Infant Feeding," recently published, Prof. Louis Fischer devotes considerable space to and emphasizes the necessity of feeding with cow's milk in its "natural state," *i. e.*, *feeding with raw milk*. "This," says one prominent author, "seems off hand like a broad statement, but when we consider that breast milk is 'raw milk' and that we are simply copying from nature by feeding, then we can readily see the vast importance of this method of feeding. Clinical evidence is certainly in favour of feeding milk in its raw state owing to its anti-scorbutic qualities, and besides it does not cause that terrible bug-bearer of the beginner and possibly also the older practitioner, viz., constipation."

Does it not, then, seem better to aim in securing *clean* milk and applying the principles of sterilization, or, if you prefer the term, pasteurization, to the stable, to the milker's hands and to all utensils coming in contact with the milk from the beginning to the end of the milking? In this manner we do away with the possible contamination of the milk, with stable and other filth, and avoid infection with micro-organisms.

Diluents.—No phase of the infant-feeding problem has been studied so assiduously or created so much controversy as has the vexed question of "diluents"; and, while all authorities are agreed that cow's milk should be diluted with something to bring down the excess of proteid, yet there is great diversity of opinion as to which is the best agent to use for this purpose. Simple dilution with water has been recommended by some; others suggest the addition of an alkali, such as plain or saccharated lime-water; one prominent pediatrist favours a decoction of gum-arabic or solution of

gelatine as a diluent for very young infants, and another equally noted specialist argues strongly in favour of cereal infusions. It is our purpose here to call attention to the latter method, which is probably more extensively employed than any of the others, and give, in brief, the reasons advanced for its use, by its chief promoter, whose name is favourably known in pediatric circles over the entire world.

In a paper entitled "The Place of Cereals in Infant Feeding," read before the American Pediatric Society, at Niagara Falls, May 28, 1901, Henry Dwight Chapin, M.D., of New York, recommends for use as a diluent in home modifications a predigested cereal gruel made as follows: "Make into a paste two tablespoonfuls of wheat or barley flower with cold water, and add to a quart of water. Boil fifteen minutes; add a pinch of salt. When cool add to this a preparation of diastase. Cereo (a glycerite of diastase) is especially recommended, two teaspoonfuls to the quart. Of this diluent, now dextrinized, add three parts to one part of the 'nine ounces of top milk'; add the sugar, one part to twenty, and you have a humanized milk." "On the theoretical side," says this author, "it must be confessed that, at first sight, the employment of a material in a form not found in human milk may appear unwarranted to those who desire a strictly scientific reason for all procedures." But, we may add, if it can be shown that the curd of cow's milk is thus rendered more digestible, a strong reason appears for its employment.

The introduction of system into infant feeding has been a great advance and has doubtless come to stay, but it has also emphasized the fact that changing the percentages in cow's milk to correspond with those in breast milk *does not change cow's milk into woman's milk.* Changing the percentages of proteid, fat and sugar, in cow's milk to equal those of woman's milk simply records the quantities of those ingredients in *cow's milk.* While we must admit the importance of effecting this agreement (*i. e.*, in the percentages of these three essential ingredients), and believe that it should always be accomplished, yet we must not remain blind to the fact that one of these ingredients of cow's milk, viz., the proteid, is not of the same *nature* as that of mother's milk. In other words, the proteid in the latter is one part casein to two parts albumin and globulin, while in cow's milk the proteid is composed of four fifths casein. Inas-

much as albumin and globulin are readily soluble and easily digested and absorbed, while casein is insoluble and must undergo certain transformations before it can be absorbed, it will be seen that the proteid of cow's milk ($\frac{4}{5}$ casein) requires more digestive effort than the proteid of woman's milk ($\frac{1}{3}$ casein).

It may be seen the amount of curd formed in milk depends upon the proportion of casein present, and the le s bulky the curd the more easily digested is the milk. White and Ladd, of Harvard, as a result of their experiments, have arrived at the conclusion that, by the use of whey as a diluent of creams of various strengths, they are able to modify cow's milk so that its proportions of casein and soluble (whey) proteids will closely correspond to the proportions present in human milk—thus rendering it much more digestible and suitable for infant feeding. They claim that whey cream mixtures yield a much finer, less bulky and more digestible coagulum than plain modified mixture with the same total proteids. They admit, however, that barley water mixtures yield a coagulum equally fine. It will be seen, therefore, that it is to break up the curd of cow's milk, and thus furnish a small quantity of easily absorbable food, that cereal gruels (in which the starch has been converted into dextrin and maltose) are advocated as diluents; it having already been shown that the curd of cow's milk, with a digested gruel diluent, passed through a sieve having 900 meshes to the square inch, while those with water diluent remained on the sieve. How much effect a digestive gruel has on the curd of milk depends, of course, on the strength of the gruel and the dilution of the milk.

Thus, after years of careful study and experiment, it has been found that cow's milk may be so modified as to correspond very closely to mother's milk, not only in the relative proportions of its total constituents (proteid, fat and sugar), but also in the composition of the proteid itself—the casein being so reduced that a much less bulky curd is formed which is more easily digested. It is for this latter purpose that White and Ladd's "whey mixtures" and Chapin's "cereal infusions" have been recommended; and, though experience has proven that they are advantageous in many cases, yet the fact remains that, though the curd has been reduced in amount, it is not of the same *character* as that formed from mother's milk, *i. e.*, it is still often re-

gurgitated from the infant's stomach in hard, lumpy masses. To overcome this latter difficulty, after many expedients have been tried and nothing found that the patient will tolerate (and where there is little time for further experiment), the following plan may always be adopted and for the reasons hereinafter given :

Caroidization.—There are two great classes of milk: 1. Those that form hard, solid curds with rennet—cow's milk. 2. Those that form soft, flaky curds with rennet—woman's milk In other words, the rule seems to be that animals that ruminate furnish their young with milk that curds in solid lumps and animals that masticate their food before swallowing it furnish their young with milk that curds in soft flakes. The human stomach receives food in a finely divided state, and woman's milk curds in loose flakes.

Dr. Brush has explained this property of forming hard curds as belonging to the milk of all cud-chewers in contradistinction to the softer and more flaky curds of the milk of those animals which are not cud-chewers. He says : " The young of the former all chew the cud soon after birth, therefore the milk designed for their use contains a variety of casein which coagulates into a mass sufficiently hard and consistent to be regurgitated and chewed." Furthermore, it has been shown by analysis (Cf. Richmond's " Dairy Chemistry ") that the milks that form solid curds with rennet are furnished by animals whose normal digestion is *prolonged* and whose elimentary canals are relatively very much longer than those animals whose milk forms soft flaky curds. It is evident, therefore, that the human infant's stomach is likely to find difficulty in digesting the casein of cow's milk (even when present in the same proportion as in mother's milk) unless it is first partially broken up so as to form a fine flocculent curd—easily disintegrated and rendered fit for absorption.

It has been found that during digestion there is an increased elimination of nitrogen from the system which is proportional to the intensity of digestive work ; also an increase of about fifteen per cent. in the quantity of oxygen consumed and a larger increase of carbon dioxide thrown off. This shows an immediate demand for proteids and carbohydrates at the *beginning* of a meal ; and it is known that when milk is taken into the stomach the first step in its digestion is a separation of the easily absorbable albumins

and sugars from the casein and fat, which require digestion as they are left in a semi-solid state.

It will thus be seen that the increased demand for proteids and carbohydrates, during digestion, is met by a separation of the soluble constitutents of the milk as soon as it is swallowed. Furthermore, the secretion of all the digestive juices is promoted by this absorption at the beginning of the meal, *i. e.*, the normal digestive process is ushered in. This is what happens when woman's milk is taken. But when cow's milk diluted with water is given to an infant the quantity of readily absorbable food is reduced to almost nothing, and the proteids and fat form a solid curd which is either regurgitated or passes on into the intestines to ferment and serve as a source of irritation. The result of this process, if continued, is to interfere with the secretion of the digestive ferments; and milk which enters the stomach finally meets with the same reception that it would if it were injected into the rectum, *i. e.*, it remains unabsorbed because its insoluble constituent (casein) has not been changed into (soluble) peptone. Every practitioner of any experience knows that in feeding by the rectum the milk must first be peptonized—or it will not be absorbed.

For the same reason in many cases of infantile maldigestion the casein of cow's milk must be put into a partially digested or soluble condition before its administration, *i. e.*, it must be acted upon by a ferment. The value of barley water and other cereal infusions, in breaking up and making the curd soften, is due to the action of the starches and diastasic ferments which they contain. The food that is most finely divided and can most easily leave the stomach is the most suitable for weak digestions. Digestive enzymes act by contact, and neither take away nor add anything to the substance acted upon. For this reason, a pure vegetable ferment, like caroid, is superior to a cereal infusion which adds starch, cellulose and other constituents to the food, which must themselves be digested.

In all cases of faulty digestion, therefore, caused by the formation of insoluble curds in the infant's stomach, caroidized milk prepared as follows will be found of the greatest utility: Heat the purest, freshest cow's milk obtainable (modified as suggested under "home feeding") until lukewarm, then stir two or three grains of caroid into it, and when the curd has set (which will be within two or three minutes) beat it up until it is almost re-liquefied. Re-warm this if necessary, and feed through a nipple as in ordinary

bottle feeding. After the caroid has been added the milk must not be allowed to stand very long, as it will acquire the bitter taste characteristic of the formation of peptone. Each feeding should be prepared separately, therefore, and should be fresh.

The advantages of the above method are: 1. That it is impossible to re-curdle milk thus treated, hence tough and indigestible curds are avoided. 2. Digestion will go on in both the stomach and intestines until the casein is entirely absorbed, the process being assisted partially by the digestive apparatus of the infant.

As hyperacidity usually prevails in the infant's stomach in cases of maldigestion some physicians prefer to neutralize this condition by adding lime water to the milk in the proportion of one to four. This may also be done with caroidized milk. An efficient substitute for lime water is the "liquor calcis saccharatus" of the British Pharmacopœia, from five to fifteen drops of this solution being added to each half pint of the milk mixture.

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A PLEA FOR LARGER DOSES OF ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.

BY JOHN H. MCCOLLOM, M.D.

DR. MCCOLLOM first calls attention to the statistics proving the fact that, in the time previous to the use of antitoxin, diphtheria was more prevalent and yielded a higher mortality rate in Boston than in London, Paris, Berlin,

Liverpool and Glasgow. He also quotes statistics which prove that in no other American city has the mortality rate from diphtheria undergone such "marked and continuous diminution" as has occurred in Boston, and states that "a diminution from 18 per 10,000 to 4.99 in five years cannot be attributed to good fortune nor to the mild types of the disease. This diminution can only be explained by the use of antitoxin and treatment in hospital" . . . . "In the pre-historic days, previous to 1895, in the Boston City Hospital the rate (of mortality) was 46 per cent. In the same hospital, since 1895, during which time 7,657 patients were treated with antitoxin, the percentage of mortality was 12.9. It must be borne in mind that these were all cases of diphtheria both from a clinical and from a bacteriological point of view."

Dr. McCollom quotes statistics which prove that in the Boston City Hospital, where *very large doses of antitoxin were employed*, the mortality rate is much lower than in the other three large contagious disease-hospitals, viz., those of London, Glasgow and Philadelphia. "For instance, compare the hospital in Philadelphia with a percentage of mortality of 63 in children under one year of age, with that of the Boston City Hospital (contagious-disease department), with a percentage of 26." This difference is all the more striking when one considers that the mortality rate in very young children is extremely high.

Dr. McCollom quotes figures which show that this difference in mortality between the Boston City Hospital and other contagious-disease hospitals is equally pronounced among patients of all ages, and in the laryngeal types of the disease and in the cases requiring intubation or tracheotomy.

These statistics, based upon thousands of cases, prove conclusively that, by large doses of antitoxin, many thousands of patients, who now die when only small or moderate doses are employed, could be saved by employing antitoxin in the quantities used in the Boston City Hospital. In the following quotation from Dr. McCollom's paper, the proper adaptation of the quantity of antitoxin to the individual case is tersely urged:

"No hard and firm rule can be made regarding the use of the serum. The agent must be given until the characteristic effect is produced on the diphtheritic membrane. In some cases 4,000 units will accomplish this; in other instances 60,000 or 70,000 units may be required. When a guinea pig is inoculated at the laboratory with a certain definite amount of the toxin of diphtheria, it is a very easy matter to antagonize this with a certain amount of anti-

toxin. In the case of a patient ill with diphtheria, there is no way of estimating the quantity of toxin generated by the membrane, and, therefore, one must administer the agent until the characteristic effect is produced, viz., the shriveling of the membrane, the diminution of the nasal discharge, the correction of the fetid odor and a general improvement in the condition of the patient. In the operative cases the beneficial effect of large doses of antitoxin has been marked, preventing, in many instances, the extension of membrane to the smaller ramifications of the bronchi—a most important factor in raising the death rate in this class of cases. In the operative cases, it is safe to say that nearly twenty per cent. of the deaths were caused by blocking of the bronchi with diphtheritic membrane. At the South Department the autopsies proved this fact.

"No case of diphtheria should be considered hopeless. Antitoxin should be administered in each and every instance. It has been my experience during the past few years to see so many patients apparently hopelessly ill recover that my convictions are very firm on this subject. When one sees a patient with membrane covering the tonsils and uvula, profuse sanious discharge from the nose, spots of ecchymosis on the body and extremities, cold, clammy hands and feet, a feeble pulse and the nauseous odour of diphtheria, and finds that after the administration of 10,000 units of antitoxin, in two doses, the condition of the patient improves slightly, that, after 10,000 units more have been given, there is a marked abatement in the severity of the symptoms; that, when an additional 10,000 units have been given, the patient is apparently out of danger, and eventually recovers, one must believe in the curative power of antitoxin. When one sees a patient in whom the intubation tube has been repeatedly clogged—when the hopeless condition of the patient changes for the better after the administration of 50,000 units, one cannot help but be convinced of the importance of giving large doses of antitoxin in the very severe and apparently hopeless cases. In the majority of instances these large doses are not required, particularly if the patients are seen early in the attack, 4,000 to 6,000 units being enough to produce the characteristic effect on the membrane. As illustrating the advantage of the early administration of antitoxin, an allusion to the cases of diphtheria occurring in the staff of the South Department may be of interest. There have been since September, 1895, 104 instances of diphtheria contracted in the line of duty, and not a single death. Each pa-

tient received a full dose of antitoxin (4,000 units) at the outset, or as soon as there were any symptoms of the disease. In some instances it was not necessary to repeat the dose; in others the doses were repeated two or three times. It is of interest to note that in this series of cases there were no marked symptoms of paralysis; that heart complications did not occur, and that the duration of the illness was comparatively short. It must be borne in mind that these were genuine cases of diphtheria, contracted under unfavourable conditions.

"In the study of any particular line of treatment for a special disease, the clinical picture presented by patients ill with that disease is always of interest, and is frequently more conclusive than a simple array of figures. A short history of a few of the extremely severe cases of diphtheria, in which antitoxin was administered in large doses, will be given.

"*Case 1.*—A boy, six years of age. When admitted he had been ill three days; there was a large patch of membrane on each tonsil; the uvula was edematous; there was a profuse nasal discharge. Dyspnoea was very great, and there was marked cyanosis. The cultures were positive. Pulse feeble and rapid. Temperature, 99.5. There was a slight trace of albumin in the urine. He was intubed at once, and given 4,000 units of antitoxin. The intubation tube not giving relief, it was removed in ten minutes, when the patient expectorated a quantity of thick, tough, tenacious mucus, and the breathing immediately became easier. On the second day after admission the dyspnoea was urgent, and the boy was re-intubed with marked relief. In four days this patient had 56,000 units of antitoxin without any injurious effect and with positive relief. He was discharged well. He had none of the usual sequelae of diphtheria. He did have a troublesome urticaria. The heart did not at any time have an irregular action; there was no indication of paralysis.

"*Case 2.*—A girl, six years old. She had been ill three days when admitted. The tonsils and uvula were covered with a thick membrane. Pulse rapid and weak. The membrane commenced to disappear in three days, but on the fourth it commenced to re-form, and, therefore, large doses of antitoxin were given. In all this patient received 80,000 units of antitoxin. The cervical glands suppurated. At one time during the course of the attack the action of the heart was irregular. There was a slight palatal paralysis. At one time there was a slight trace of albumin in the urine. She made a good recovery.

"*Case 3.*—A man eighteen years old. He had been ill one week at the time of admission. There was great prostration; a profuse nasal discharge with a foul odour; there was a very extensive membrane covering the tonsils, uvula and palate. The action of the heart was feeble; the sounds indistinct. Pulse feeble. The general condition indicated speedy death. He had on entrance an initial dose of 6,000 units of antitoxin, repeated in five hours. The next day he had four doses of 6,000 units each, and on the third and fourth days a like quantity. On the fifth day after entrance the throat was clear and the mucous membrane normal in appearance. For the first four days delirium was a marked symptom. The patient was unable to swallow, and food and stimulants were given by the rectum. At one time there was a slightly nasal voice, but there was no marked paralysis. The action of the heart was regular at the time of discharge. A slight trace of albumin was found in the urine. Urticaria was an annoying complication, but not a grave one. There was no arthralgia. Brandy and strychnia were given in large doses. It is cases of this class that swell the mortality ratio of hospitals. "The patient was moribund when admitted; he left the hospital well, and has been well up to the present time. It is possible that the man might have recovered with a slightly diminished dose; it is certain that the usual doses of antitoxin would not have saved his life, and it is also certain that no injurious effect followed the large dose.

"*Case 4.*—A coloured boy, seven years old. On admission this patient had a very weak pulse; the heart sounds were feeble; the tonsils, uvula and hard palate were covered with a dirty necrotic membrane; there was a profuse nasal discharge; the cervical glands on the right side had sloughed; there was an intolerable odour. His condition was as unfavourable as it could well be. The boy had 84,000 units of antitoxin in five days. He was discharged well in sixty-six days. At the end of the sixth day after entrance the condition of the patient had improved so much that no one who had not seen him on entrance would have believed that he had been so critically ill. He made a good recovery, which was somewhat delayed by post-diphtheritic paralysis. He was nourished during part of the time by the rectum. At one time during convalescence he had one-eighth of one per cent. of albumin in the urine. This albuminuria could not, however, be attributed to the antitoxin, as it is one of the most frequent symptoms in severe attacks of diphtheria, and was recognized and described long before the days of antitoxin.

"Many more cases might be cited in which large doses of antitoxin were given with satisfactory results, but enough has been said to prove that small doses of antitoxin are of little avail in the treatment of grave types of the disease; that, in order to obtain the best results, the serum must be heroically administered. It is true that all of the patients to whom large doses of antitoxin have been given have not recovered, but so many of them have that one must be convinced that large doses are imperatively demanded in very severe cases. When death has occurred it has been from nerve degeneration or from sepsis. In no instance was there any injurious effect produced by either the large or small doses of antitoxin. Albuminuria, although present in many cases, cannot be attributed to the serum, as albuminuria is one of the most frequent symptoms in diphtheria. Heart complications of a serious nature have not been so frequent in the 7,657 patients treated at the South Department as would have been the case in a like number treated without antitoxin. Paralysis, although occurring in the severer cases, has not been so prominent as it would have been in an equal number of cases treated without antitoxin. Urticaria and arthralgia are certainly very annoying complications, but they do not imperil the life of the patient, and are, therefore, not worthy of being considered an argument against the use of the serum.

"Although different remedies were used to prevent the extension of membrane before the advent of antitoxin, the death rate from diphtheria remained about the same until the introduction of antitoxin. Before the days of antitoxin there was no method of limiting the extension of the membrane. The number of different applications to the diphtheritic membrane was so great as to prove that no one of them was satisfacory. No germicide can be of sufficient strength to effectually destroy the bacilli of diphtheria without causing destruction of the mucous membrane, and thus opening a fresh field for the growth of the organism.

"From a comparison of the health reports of Boston (before and after the introduction of the anti-diphtheritic serum), from a comparison of the health reports of other cities, from a study of hospital reports, from a clinical observation of nearly 8,000 cases of diphtheria, the following conclusions are justifiable:

"1. That the ratio of mortality of diphtheria, per 10,000 of the living, was very high in Boston previous to 1895.

"2. That the ratio of mortality per 10,000 has been very materially reduced since the introduction of antitoxin.

"3. That the percentage of mortality in the South Department is lower than that of any of the hospitals taken for comparison.

"4. That, since larger doses of antitoxin have been given, the death rate has been materially reduced, the reduction having occurred in the apparently moribund cases.

"5. That no injurious effect has followed the use of the serum.

"6. That, to arrive at the most satisfactory results in the treatment of diphtheria, antitoxin should be given at the earliest possible moment in the course of the disease."

THE FOUR ESSENTIALS IN THE TREATMENT OF DIPHTHERIA.

1. Use antitoxin early—soon as diphtheria is suspected. For immunizing, 500 to 1,000 units are recommended.

2. Curative dose: Where the attack of diphtheria is slight and the patient is treated on first day of disease, 2,000 units is invariably sufficient; when treated on second or third day of disease give 3,000 units. Where the administration of antitoxin is delayed or disease is severe, never administer less than 3,000 units. In all cases repeat or double the initial dose if favourable results do not follow within six or eight hours after first injection—no bad results can follow its use. Remember the only danger is in insufficient dosage. Keep patient quiet and in bed.

3. Children require larger doses than adults, since they are more susceptible to the disease. Remember antitoxin is an antidote, and sufficient must be given to fully neutralize the toxins of diphtheria. There is no danger of giving too much, but of using too little.

DIAGNOSIS IN DISEASES OF INFANCY AND CHILDHOOD.

By JOHN ZAHORSKY, M.D. St Louis.

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CONVULSIONS.

Infantile convulsions or eclampsia is that group of symptoms characterized by general or partial, irregular, clonic muscular contractions. Loss of consciousness accompanies these contractions.

The underlying pathologic condition is a heightened irritability of the central nervous system which results in

a series of motor discharges induced by a peripheral or central excitant.

It is assumed that the practitioner will recognize these clonic muscular spasms.

Having administered chloroform or utilized any other appropriate means, and the severity of the spasms having been subdued, the causation of the symptoms must be sought. Take the rectal temperature.

I.—A VERY HIGH FEVER IS PRESENT.

In the majority of cases a very high fever or hyperpyrexia will be found to exist. Further inquiry must then be instituted as to the cause of the fever. The principles laid down in the former articles on fever are perfectly appropriate in this condition. The same care must be observed in examining the various organs of the body for evidences of infection.

Affections of the respiratory tract, which are initiated with a high temperature, must be considered. Among these influenza and pneumonia are the most frequent. During an epidemic of influenza convulsions are exceedingly common among infants.

Infections of the gastro-enteric tract are the common causes of this group of symptoms. But no doubt in the past there has been too great a stress laid on intestinal irritants. Toxemia from decomposing food may excite fever and convulsions. At the onset of fermental or inflammatory diarrhoea and dysentery convulsions may arise. But it is not rational to assume, as many practitioners seem to do, that the majority of cases are caused by eating some indigestible food.

Eclampsia is a common symptom in all acute infections of the nervous system. When the attacks are repeated very frequently in twenty-four hours and the patient is over two years of age, cerebral infections must be strongly suspected. In infants, on account of the open cranial sutures and fontanelles, eclamptic seizures are less common even in grave cerebral diseases than might be expected.

The blood infections to be considered are malaria and the acute exanthemata. In malarious countries the former disease must invariably be given first place. Scarlet fever among the infectious diseases is the most apt to cause spasms.

Acute suppurative inflammations in any of the internal organs, as the bones, muscles, cellular tissue, liver, kidney, etc., may serve as the exciting cause.

In summer, during the very hot weather, thermic fever is not rare. When the temperature reaches 107 degrees convulsions are imminent.

II.—LITTLE OR NO FEVER IS PRESENT.

When little or no rise in temperature exists one is compelled to assume that some hereditary or acquired instability of the nervous system is present.

Under congenital or hereditary influences must be classed defects of the cerebral structure, cerebral paralysis, epilepsy and various neuropathic states not classified. A repeated afebrile convulsion in the absence of demonstrable organic disease always suggests epilepsy.

Among the acquired conditions are acute diseases and chronic diseases of the central nervous system, which produce alterations in its structure and functions. Acute encephalitis, cerebral hemorrhage, meningitis, etc. Each of these may have changes which thereafter leave the motor area in an unstable condition.

Nutritive disturbances, so common in infancy, must always be studied. Rickets is a condition which enhances the irritability of the nervous system, and slight excitants may initiate a motor discharge. The most characteristic is that form of tonic spasms called tetany, which must be sharply differentiated from the clonic spasms of eclampsia. Laryngo-spasm is rather similar to tetany.

Various forms of malnutrition may create an unstable nervous system. The starvation following disease of the stomach and intestines, tuberculosis, laryngeal stenosis and syphillis can so change the function of the nervous system as to result in great irritability.

Having determined the existence of this nervous instability the peripheral excitant must still be sought. In the presence of a slight fever some mild infection, such as influenza, tonsilitis, stomatitis and gastro-enteric disease should be suspected.

Simple irritation of the end organs of certain afferent nerves, whether this irritation is caused by thermal, mechanical or chemical agents may serve as the exciting cause. The skin, the alimentary mucous membrane, the genito urinary tract and the respiratory tract must each be separated, studied. The baby must be stripped and examined. Inquiry must be made as to the recent diet. The genitive organs should be examined as to the presence of phimosis. The urine should be studied for uric acid crystals.

Sudden changes in the intracranial pressure, whether induced by a paroxysm of pertussis, a severe straining, as in constipation, enlarged thymus gland or other tumour pressing on the large vessels leading to the cranium, each of these may serve as a factor in the etiology.

When all our efforts fail to locate the cause outside of the brain, and the convulsions are repeated, the brain must become the point of continued study. Epilepsy is the most common. But cerebral tumour, abscess, chronic hydrocephalus, cerebral syphilis, hemorrhage and chronic meningitis, each must be carefully excluded.

Many times severe injuries to the cranial vault, or to other parts of the body result in convulsions. But here the immediate history or the signs of injury at once suggest the cause.

Hysterical convulsions occur also in childhood. They are often puzzling, and only careful study will reveal their true nature.

But often a convulsion will come and pass away harmlessly, and the physician will not have been able to make a positive diagnosis.—*Med. Fortnightly.*

TONSILLITIS.

Diagnosis.—Dundas Grant says that occasionally the medical attendant and friends of patients affected with acute tonsillitis are considerably alarmed by the appearance, on the upper and posterior part of the tonsil, of what seems to be a deep excavated ulcer of oval shape, the floor of which is covered with a white, slough-like membrane.

Killian points out that in the new-born child the tonsil consists of three masses of tonsil-tissue, between which are two furrows; the uppermost mass and the furrow next to it are the most persistent; the lower furrow gradually disappears, and the tissue, which forms the bulk of the adult's tonsil, is covered to a considerable extent by a triangular fold of membrane running downward and backward from the anterior pillar of the fauces.

Killian recommends for the better examination of the tonsil that the head should be turned toward the affected side, the tongue pulled out toward that side and the opposite angle of the mouth retracted while the patient utters the sound "hay." In this position the tonsil is looked at more nearly from the middle line, so that the furrow and the marginal cushion above and behind it can be readily recog

nized. It is extremely probable that the furrow has been frequently mistaken for excavating ulcers by others, as they have been personally.

Etiology.—Follicular tonsillitis and peritonsillitis are believed by Joseph Meyer to be due to the infection of toxins or bacteria, the latter probably made active by what is commonly called a cold, setting the bacteria into action, upon a field which they before may have occupied, but, through said cold, the field has become a field of less resistance and a most suitable soil for bacterial activity and absorption of toxins. The tonsils may have, as claimed by some, anti-bactericidal properties, but because of their peculiar conformation they also have, in a high degree, the capacity for storing bacteria and putrefactive matter, either of which may become active through a cold or of their own accord at any time that conditions are favourable.

Prophylaxis.—W. Freudenthal says that it is impossible to prevent acute lacunar inflammation by the use of any drug, but it can be done by attention to the climatic factors, which play an important rôle in the etiology of this affection. To prevent acute lacunar amygdalitis one should not bundle up children in cloths, but harden them to changes of temperature. Mucus dropping down into the naso-pharynx and drying, acts as a foreign body, and causes an irritation which predisposes to lacunar inflammation. The obvious indication is to treat the naso-pharynx.

Treatment.—Joseph Meyer thinks that the abortive treatment of follicular tonsillitis and peritonsillitis consists of two things, viz.:—

1. Treatment of the initial stage.

2. Cleansing the lacunæ by syringing them with bichloride solution 1 to 1000.

If the patient is seen early enough and the preceding symptom of a cold are present, a uniform temperature, also rest in bed, with hot beef-tea or milk as a drink, getting up a good sweat followed by a hot towel rub-down, will often abort or ameliorate an attack of follicular tonsillitis or quinsy by bringing about less favourable condition for bacterial action.

A simple one-fourth or one-half ounce syringe of the laryngeal type is personally used for syringing the lacunæ. If the mouths of the lacuna are narrow, one of the lips may be lifted up with a cotton-carrier or blunt curette, stretched slightly, or opened with a small knife, and then the syringe

can be introduced with ease. The nozzle of the syringe should be introduced deeply into the lacunæ and the fluid injected; often one will be surprised to see a plug come out of a neighbouring lacuna or the fluid injected from a number of lacunæ. The relief often is immediate.

In cases where most of the inflammatory trouble has passed over, but one or two lacunæ are filled with cheesy matter, leaving still a sore sensation, some pain on swallowing, with some swelling of the tonsil; this method is admirably adapted. The syringing must be thoroughly done with a proper syringe, and quite warm bichloride solution (1 to 1000).

According to Samuel Floersheim, the local application of tincture of iodine in acute tonsillitis is of value. The method of application is simply to saturate a long camel's-hair brush with the tincture of iodine, and rapidly brush over the inflamed area *i.e.*, tonsils, pharynx, uvula, fauces, etc. Should the patient experience intense burning after two minutes, a gargle of plain, warm water suffices to relieve the condition. If the patient does not experience the burning the remedy is usually applied a second time, from three to four minutes after the first application. The results have been marvelous. Patients who had considerable pain were relieved, and those who could not sleep, eat or drink were also relieved within five minutes.

In 68 cases of acute catarrhal and follicular amygdalitis treated by this method within the past two years the most gratifying results have been noted. Relief from the distressing symptoms was observed within five minutes after the application of the remedy to the inflamed area in every case observed. The intense redness and swelling also became considerably decreased within five minutes.

When the inflamed area, after twenty-four hours, had shown much improvement with a tendency toward a rapid cure, the application of the tincture of iodine was not repeated. In some of the cases nothing else was done; in others the usual throat remedies appropriate to the disease were prescribed.

M. R. Ward says the treatment of acute lacunar inflammation should be both local and constitutional. The local application of guaiacol is alleged by some to have the power to abort the process. Small pieces of cracked ice or ice water are decidedly useful in the early stages. The patient should be freely purged with calomel or with effervescent phosphate

of sodium. The value of tincture of chloride of iron cannot be over-estimated, and it should be given throughout the acute stage. Codeine, salol and phenacetin relieve the headache and other pains. The tonsils should be removed in the interval of the attacks.—*Monthly Cyclopædia of Medicine.*

Progress of Medical Science.

MEDICINE AND NEUROLOGY

IN CHARGE OF

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USES AND ABUSES OF ARSENIC.

Arsenic is one of our most valuable medicines, and one that is not as popular as it should be among the profession generally. Many practitioners who do not see much of skin diseases seem to have an idea that arsenic is a remedy which can be administered in almost every lesion of the skin with advantage, and fail to recognize that, as a rule, it is contra-indicated whenever the layers of the skin are inflamed, being most useful when the epiderm is dry and improperly nourished, and of very little use when the corium is inflamed. Psoriasis is a typical disease of the former class, and in its treatment arsenic is a standard remedy. As stated above, the medicine should not be prescribed during the inflammatory stage of a skin disease. When used, it should be kept up for weeks, even months. As a result of the constant employment of arsenic when it ought not to be used, we see cases where great damage is done by its too-free administration. We must also remember that the drug given in large doses is capable of producing some renal irritation as well as irritation of the stomach and intestines, and that a condition of irritability of the mucous membranes of the body generally are sometimes caused by too large a dose. Dr. Hare calls our attention to the use of arsenic as a valuable appetizer in doses of a minim of Fowler's solution with ten grains of bicarbonate soda and a tablespoonful of infusion of genitan taken before meals. I have used it this way and certainly found it a very valuable tonic. It is also useful in certain forms of morning diarrhoea and nausea; also it

is valuable in the treatment of various forms of anaemia, in which case it must be given over long periods.

It is hardly necessary to remind you that it is almost a specific in the treatment of chorea, and its value as a blood tonic in malaria, and its great value in diabetes and asthma. It is held by Murray and others that it is useful in those asthmatic cases which are young, and the old with marked emphysema. It is also valuable in cases that have nasal disorders due to hyperemia of the respiratory mucous membrane. While recognizing the value of arsenic, we must not forget that it is possible for it to produce evil influences; that it is capable, when administered too long a time in large doses, of causing pigmentation of the skin, irritation of the stomach and of the respiratory tract, and, more serious still, peripheral neuritis.

In the treatment of chorea I find it of the greatest value. You must use it in increasing doses, and this is one of the few diseases in which arsenic is so valuable that you have to give it in ascending doses, even to tolerance. I find it of the greatest value in anemia; even the obstinate and often incurable cases of pernicious anemia yield better to arsenic than to any other known remedy; it is to be given in small doses and kept up for months. In the small dose you are not so likely to produce stomach disturbances The effect of the drug in this disease is not due to its increasing the number and quality of the red blood corpuscles, but rather to its preventing or delaying their destruction in the portal circulation. By timely use of laxatives and careful watching the dosage you may easily adjust the blood-making forces.

Dysmenorrhoea, frequently noticed in women with a tendency to asthma or subject to chronic skin diseases, is often cured or benefited by arsenic.

Arsenic ranks next to quinine in treatment of malaria; for instance, chronic cases, where quinine has lost its power, are markedly benefited by arsenic.

Neuralgic headaches and anaemia of malarial origin are very amenable to the drug. Fowler first reported the remarkable efficiency of arsenic in neuralgia of the intercostal and fifth pair of nerves.

It is equally as valuable in these cases, whether the disease be due to malaria or general debility. I have frequently gotten very good results in pulmonary phthisis, especially in those cases where there is excessive expectoration and slow degenerative processes. The good effect of the arsenic is shown by the rapid improvement of their general condition, there being a lesser pulmonary secretion, a general improvement in the appetite, and increase

in the body weight. It is contra-indicated in phthisis where the cough is hoarse and paroxysmal, with but scanty secretions and tendency to hemorrhage. When I want to improve the nutrition of my patients I find it the most valuable of tonics. It has not the power of increasing red blood cells, but it stops the destruction of the cell and thereby shows its great influence on the general nutrition. I do not know of any tonic that we can expect to give us better results than arsenic when administered in the proper way. In regard to the preparation used, it is just a matter of preference. I find Fowler's solution to be the most useful in a general way, and use this preparation more than any other. I believe that failure follows so many because they do not persist in its use for a long time. —*P. C. Simpson, M. D., in Am. Practitioner.*

TREATMENT OF CERTAIN FORMS OF CANCER BY THE X-RAY.

Williams (*Jour. Amer. Med. Ass'n.*, September 14, 1901) divides cancers, from the standpoint of X-ray treatment, into internal and external forms, of which he discusses only the latter class in regard to the therapeutic effect of the X-ray. This class includes epidermoid cancers, typical epitheliomas and rodent ulcers, "and also cases which had the clinical appearance of beginning cancers, but which, under the microscope, were found to be plasmona, or simple cases of ulceration and necrosis," . . . situated particularly about the face and hands. They are the forms that have been amenable, in a measure, to other therapeutic proceedings, but the present method has the advantage of painlessness, harmlessness, and that it yields good cosmetic effects. Great care is to be taken to prevent X-ray burns. The advantages of this new method are: "The treatment causes no pain; healing is produced without creating a burn; some cases improve after a few sittings without further renewal of treatment; the treatment can be carried on without interfering with the work of the patient."

OXYGEN AND STEAM WITH THE VAPOURS OF A SPECIAL INHALATION MIXTURE IN PULMONARY DISEASES.

Penrose (*Johns Hopkins Hosp. Bull.*, November, 1900) advocates the use in catarrhal affections of the nose, pharynx, larynx, in grip, chronic bronchitis and pulmonary tuberculosis with secondary infection, of steam or oxygen, or both, which has been passed through a mixture of creosote, turpentine and compound tincture of benzoin in a

pint of boiling water. He details a case of tuberculosis with beginning cavity formation in which the sputum decreased rapidly and pus organisms disappeared entirely within a few weeks. Patient gained weight, and the tubercle bacilli disappeared after three months of the inhalation treatment; another case, one of purulent bronchitis, in which the sputum and the pus organisms rapidly disappeared and the cough ceased; finally a case of chronic infantile purulent bronchitis, which yielded rapidly, and permitted a rapid development of the child.

The method may be applied by passing oxygen or steam through the mixture, utilizing a "Benzoinal Inhaler" or "Hynson and Westcott Inhaler," or, more simply and less expensively, especially for home use, by inhaling the fumes as they rise from the boiling water. To be effective, inhalations should be of ten to fifteen minutes' duration, and taken systematically three or four times a day. To begin with the following formula is used:

℞ Creosote (Beechwood) .....
Olei terebinthinæ .....aa ʒ iv
Tr. benzoini co .....ʒ iij
M. Sig.—Dram of this mixture to a pint of boiling water.

A greater proportion of creosote and oil of turpentine may gradually be added until finally the formula contains equal parts of each ingredient.

SURGERY.

IN CHARGE OF
ROLLO CAMPBELL, M.D.,
Lecturer on Surgery, University of Bishop's College; Assistant Surgeon, Western Hospital;
AND
GEORGE FISK, M.D.,
Instructor in Surgery, University of Bishop's College; Assistant Surgeon, Western Hospital.

A NEW METHOD FOR THE RADICAL CURE OF HYDROCELE OF THE TUNICA VAGINALIS TESTIS.

The method herein described of evacuation of the sac and subsequent inversion of it is by no means a new one. Looking over the literature of the subject we see that it was first proposed some ten years ago by Vautrin, of Nancy. The French surgeons have used it largely, and in that country it is called Longuet's operation. Of late it has been introduced into Germany, where it goes by the

name of Winkelman's operation. The author makes a transverse incision on the affected side, and the sac is defined and incised longitudinally. The fluid is evacuated and the cavity irrigated with sterile water or a bichloride solution. The testicle and collapsed sac are now drawn through the skin incision, the sac split from top to bottom and turned inside out, the edges being stitched in their new position by a few catgut sutures. The testicle and tunica are returned to the scrotum, so now the entire serous surface of the tunica vaginalis proper is in apposition with the loose connective tissue of the tunica vaginalis, with which it very shortly fuses. The testicle now lies between the tunica and scrotal wall. The skin wound is closed in the usual fashion. Usually the testicle is dislocated upward as a result of the operation. The sac in its new position is unable to secrete, and speedily atrophies. The operation commends itself for its simplicity, lack of hemorrhage, freedom from complications and attainment of a radical cure. Conclusions cannot yet be drawn as to whether it causes any changes in the testicular function—P. H. Lewis, M. D., *Therapeutic Gazette.*

PERFORATION IN TYPHOID FEVER FROM AN OPERATIVE STANDPOINT.

Davis (*Amer. Jour. Surg. and Gynec.*) says: The diagnosis of perforation is not always easy. A decided and sudden increase, especially of pain, in the abdominal symptoms, associated with an abrupt fall of temperature, is diagnostic of perforation. Leucocytosis is a confirmatory sign. Hemorrhage is accompanied with a sudden fall of temperature, but not by a sudden increase of abdominal symptoms. Dullness in the right iliac region is not to be expected in cases of perforation. Localized impairment of resonance may be due to free abdominal fluid; change of position causes it to disappear. Localized pain and dullness may be due to a plastic peritonitis around the site of perforation. This may be observed perhaps in one case in ten, possibly one in five. It is impossible to recognize that a perforation is about to occur. It is not necessary to operate before a perforation occurs, but it is necessary to operate before collapse is marked. Typhoid fever patients when not in total collapse bear operation much better than was formerly expected. Patients operated on in marked collapse are liable to die on the table. I know of some such cases. Washing out the abdominal cavity with hot normal salt solution, even if no perforation is present, seems to improve the condition of the patient at the time of

operation, and to favourably influence the subsequent course of the disease. Operate as soon as the diagnosis of perforation is made. It is less dangerous for the patient to run the risk of having an operation done during the first period of depression than to wait and run the risk of having collapse preclude all operative measures. In operating, incise as for appendicitis, and not in the median or semilunar line.—*Memphis Medical Monthly.*

THE USE OF NORMAL SALT SOLUTION.

John G. Clark (Progressive Medicine) says the more extensive one's experience becomes in the use of normal salt solution as a stimulant in abdominal operations, the more convincing is the evidence of the benefits to be obtained by its use. During the past four years he has made it a practice to leave at least one liter in the peritoneal cavity, after even the simplest operations. It increases the volume of the blood, lessens its specific gravity, stimulates the cardiac ganglia and accelerates the circulation. The skin, kidneys and intestines are stimulated, and all the organs of the body functionate better under its influence. The number of red blood corpuscles is distinctly increased. Its special use in abdominal cases is to prevent shock, to lessen the effects of hemorrhage and decrease the virulence of infection. Next to the Trendelenburg posture, the author regards the introduction of the normal salt solution as one of the greatest benefits which have been conferred upon modern surgery in the last five years. Its most marked advantages are claimed to be a lessening of the thirst and an increase in the urinary excretion. Drainage from the peritoneal cavity the author regards as a problematic benefit, because of the rapidity with which absorption takes place by the lymphatics and peritoneum. In these cases he employs an infusion of large quantities of normal salt solution combined with the elevated dorsal posture. In moribund patients he has seen a marvellous stimulation from this treatment, which safely tided them over the critical period. Submammary infusions are quite as beneficial; they act almost as rapidly as intravenous transfusions, and are devoid of some of the complications which attend the latter. The writer's plan is to leave at least one or two quarts of salt solution in the abdominal cavity after every abdominal operation, and in addition to this a quart may be given beneath the mammary glands, in case the patient shows immediate shock. As a routine practice in all operations, either minor or major, one or two liters of salt solution is given per rectum for the purpose of alleviating thirst.—*Medicine.*

TREATMENT OF SIMPLE FRACTURES.

Bennett (British Medical Journal) concludes a discussion of this question as follows:

1. The treatment of simple fractures at present, although less stereotyped than hitherto, is still conducted generally too much upon lines which are traditional rather than rational.

2. The use of splints for long periods is disadvantageous, especially in the form of irremovable appliances, such as plaster of Paris and the like.

3. Speaking generally, the earlier movements of the joints above and below the fracture in a long bone are used the shorter is the time occupied in recovery.

4. The legitimate scope of the operative treatment of simple fracture is limited, and should be confined to (*a*) cases which are otherwise unmanageable; (*b*) special cases, such, for example, as certain spiral and oblique fractures, mainly of the tibia; and (*c*) certain fractures near joints in adults, notably of the humerus at the elbow.

5. The operative treatment of recent fracture of the patella is by no means so generally satisfactory or so free from risk as published cases would tend to show; and further, in cases in which the separation of the fragments does not exceed half or even three-quarters of an inch, as good results for practical purposes are usually obtainable without operation, although less rapidly.

6. The use of massage and passive movements immediately in simple fracture when the circumstances of the patient and of the practitioner admit of it, either in its entirety or with modifications, is, in the majority of cases, the best means of effecting a rapid and useful recovery.

7. The tendency of late has been to exaggerate the degree of disability and diminution in wage-earning capacity following upon simple fractures.

8. Although no pains should be spared in obtaining perfect position of the fractured ends, moderate displacement, provided it is not rotary, is not necessarily followed by any disability if care be taken by the use of early movements to prevent any matting of the parts around the fracture; in other words, the disability which follows in certain cases in which the position of the united fragments is not ideal is due, not to the bony deformity, but to the adhesion of the soft parts around, which is easily preventable.

9. Having regard to the unavoidable modifications which must be dictated by the circumstances, social and otherwise, of the patient, and by the facilities possessed by the practitioner, no one method of treatment for simple fractures can be insisted upon for routine use, even in cases in which the local conditions are precisely alike.—*Medical Standard.*

Therapeutic Notes.

BRONCHITIS.

℞ Perpinol.
Sodii Benzoatis..... ..... āā gr. 2
Sach alb.....q. s.

M. at ft. pil No. i. Take six to 12 daily.

NIGHT SWEATS OF PHTHISIS.

℞ Agaricin..... gr. 7½
Dwen Powder..... dr. 2
Powd. Marshmallow.
Mucilage of acacia.....aa dr. i

M. Div. in pil No. c. One or two pills at night.

TREATMENT OF ACUTE ALBUMINURIA AFTER SCARLET FEVER.

The following is recommended by Otto Maier, in the *Post Graduate* :—

℞ Pilocarpin hydrochlor..... gr. i | 06
Infusion digitalis..... ..... ℥iii 96 |

M. Sig. :—One teaspoonful every three hours.

He also recommends that a hot bath he given daily and a diet consisting of milk and ice cream. To promote alimination by the bowels, gives the following :—

℞ Hydrarg. chloridi mitis..... gr. iiss | 15
Pul. jalapae..... gr. ivss. | 28

M. Ft. chart. No. i. Sig.:—One such to be taken twice a week.—*Journ. of the American Med. Assn.*

℞ Heroin..... gr. $\frac{1}{16}$
Ammon Hopophos..... gr. 3
Hyoscyami..... gr. i
Pin Alb Corb..... gr. 3½
Bols Toluban..... gr. ¼
Glycerini puri..... dr. i
For each dose.

Jottings.

Salicylic acid in a salve applied to developing boils will abort them.

Strong, hot coffee will quickly overcome uterine inertia if drank freely.

Sulphur in an ointment applied just within the anus is said to rapidly destroy pinworms.

A 1-20 solution of potassium permanganate is powerfully effective in toothache.

Pyrogallic acid, fifteen grains, in one ounce of collodion will cure ringworm very speedily wherever located.

Nitroglycerine has a wonderful effect in postpartum hemorrhage; it is also excellent in vomiting of a reflex character.

Sodium phosphate increases the functional activity of the liver and stimulates the glandular organs concerned in digestion.

For diarrhoea with large watery movements with sharp, spasmodic, colicky pains, the arsenite of copper is a good remedy.

For tapeworm give eight grains of salicylic acid every hour until five or six doses have been taken, then give a good, big dose of castor oil.

In spasmodic stricture of the urethra, in spasms of the ureter, in spasms, or in the tenesmus of dysentery, we have no remedy superior to full doses of gelsemium.

Hair-cap moss (Polytrichum) it is claimed is of benefit in ascites or anasarca. It largely increases the urinary secretion and reduces the weight of the body within a few days.

A lotion prepared by dissolving one grain of the bichloride of mercury in four ounces of the peroxide of hydrogen is said to be a most excellent topical application in the treatment of diphtheria.

In the treatment of orchitis, first treat the temperature; second, administer phytolacca for its specific influence; and third, assist in general elimination by administering an occasional dose of acetate of potassium.

The date at which the rashes appear in the various diseases is as below:—Typhoid fever, seventh to ninth day; typhus fever, fourth or fifth day; smallpox, third or fourth day; measles, third or fourth day; scarlatina, first or second day.

THE

CANADA MEDICAL RECORD

PUBLISHED MONTHLY.

Subscription Price, $1.00 *per annum in advance. Single Copies*, 10 *cents*..

Make all Cheques or P.O. Money Orders for subscription, or advertising, payable to JOHN LOVELL & SON, 23 St. Nicholas Street, Montreal, to whom all business communications should be addressed.

All communications for the Journal, books for review, and exchanges, should be addressed to the Editor, Box 2174, Post Office, Montreal.

Editorial.

WESTERN GENERAL HOSPITAL, MONTREAL.

The Western Hospital has had a somewhat varied history. In 1873 a gentleman from the Southern States, named Major Mills, who had resided in Canada for about ten years, donated $12,000 to erect a wing to be used as a Western General Hospital. Through the exertion of two or three gentlemen there was collected, towards the purchase of land, about $40,000. The ground first purchased formed the corner of Mountain and Osborne Streets. It was soon felt that this site was not sufficiently far West, and that it was not large enough. It was, therefore, sold, and a property about half a mile or so further west was secured. This consisted of about 82,000 square feet and is bounded by four streets, and on one side has a fairly large public square. Those who at that period took a deep interest in the hospital scheme considered the site unique for a hospital building, and events have proved their wisdom. Atwater avenue, a very wide street, leads directly to it, from a lower section of the city in which manufactories have greatly multiplied within the last few years. In 1874 an Act of Incorporation

was obtained, and in 1876 Major Mills began the erection of his building. Owing to a variety of events, this building was not fully completed and ready for occupation till about 1880. During this period great depression had fallen upon Montreal, and the friends of the institution also found that a strong opposition had developed from a quarter which they had not anticipated. The result was that the Western Hospital Corporation did not consider the time opportune for opening it, especially as its completion by Major Mills made it his property to do with it what he pleased till he had recouped himself for the additional sum, above his original subscription, expended in finishing the building. The Women's Hospital, the charter of which was purchased by the Medical Faculty of Bishop's College, and which was in operation in small quarters, offered to lease the new Western building from Major Mills. Their offer was accepted and the Women's Hospital took possession and opened Maternity and Gynaecological departments. For about ten years this Faculty conducted therein the most successful Women's Hospital in Canada, and were able to supply their students with maternity cases, so numerous as to make them the envied of the students of all other medical schools in Canada. In 1894 they moved out of the Western Hospital and are now in possession of a building, which still enables them to supply almost unlimited midwifery cases for their students. This exodus of the Women's Hospital enabled the Western Hospital Corporation to open the building, now their property, as a General Hospital. In the twenty years which had elapsed since its incorporation death had carried away many of its early and warm supporters—others who remained threw themselves actively into the work. But the work required for a General Hospital was found so arduous that the early friends, who remained, found the task an uphill one, and looked for younger blood to assist them. Why this was not forthcoming it is perhaps best not to say; but it was not forthcoming, and the result was, that although much good work was done in the Hospital, debt accumulated rapidly. With accumulating debt the friends began to lose

interest—bad health deprived the Hospital of several of its best collectors, and meetings of the Committee could only be had at long intervals. Such a state of things, if allowed to continue, could have but one end, that is closing of the Hospital. Fortunately, a few staunch friends still remained, and these determined to make an effort to place the Hospital under a new organization. The gentleman who, for a number of years, had filled the office of President was most anxious to resign, and it was felt that if a gentleman, possessing power of organization, and other qualifications essential in a Hospital President, could be obtained, the first step in a successful reorganization would be secured. Happily, this was done by inducing Alderman C. F. Smith to accept the Presidency. He has done wonders in placing the Hospital in a better condition than it has ever been, and the work now done within its walls is not excelled by any hospital in Montreal. He has surrounded himself with an active and energetic Committee of Management, who meet regularly every week. The Hospital has a Medical Superintendent and a Lady Superintendent, who, under the medical staff, has charge of one of the best training schools for nurses in the city. The debt has been reduced by several thousands of dollars, and the yearly receipts are equal to the yearly expenditure. Nearly fifty new governors have been obtained during the last year and a half, and scarcely a week passes without one or two of Montreal's well-known citizens qualifying for this position. In fact the aspect of everything is changed for the better. This was well indicated at the annual meeting of the governors which was held on the 21st of January, when the attendance was the largest in the history of the Hospital, and great interest was evinced in the proceedings. The Secretary in his report made allusion to an offer discussed at the last quarterly meeting of the governors, for the purchase of a portion of the Hospital ground. This had been voted down by a large majority as it was felt it would all be necessary for hospital purposes in the near future. The Governors in rotation had visited the Hospital weekly, and in many in-

stances it had proved an agreeable surprise to learn the good work it was doing. Their appreciation of this was shown by many specially contributing toward some of the most urgent needs of the institution. The financial condition was considered most satisfactory, considering it only represented a hospital year of seven and a half months. This was caused by the decision of the previous annual meeting to have the hospital year run concurrent with the actual year. The receipts from subscriptions and donations average $432 per month as compared with $244 per month the preceding year. The medical report, which was read by Dr. Fisk, Medical Secretary, showed marked increase in both the Outdoor department and the Indoor department. The attendance at the former had been increased from a daily average attendance in 1900 of 11.02 to 15.95 in 1901. The increase of intern patients for the year was 33 per cent. The report was fully discussed, and was considered eminently a satisfactory one. Mr. G. B. Burland spoke encouragingly of the work which was being done under most adverse circumstances. He considered the present building unfit for a modern hospital—a new one was a necessity. He would be one of ten to erect an up-to-date building costing $100,000, which he thought would build such a one—but, if not, he would be one of the same number to erect one costing $200,000. This announcement was received with great applause. Subsequently, four gentlemen intimated that they would join a party of twenty to wipe out the debt of the Hospital. Both these offers were referred to the incoming Committee of Management. Altogether, the stock, so to speak, of the Western Hospital, was never so high as it is to-day. This has resulted from two causes: —1st, the evident need of such an institution in the rapidly growing Western part of Montreal, and, 2nd, the opening of its private wards to all reputable physicians, quite independent of their being in any way connected with the Hospital. Many of our readers we know have special interest in this Hospital and will be pleased to hear of its bright prospects.

JEFFREY HALE HOSPITAL, QUEBEC.

The annual meeting of this Hospital was held on the 16th of January, when the reports of the Secretary and the Treasurer were read. Both of these are of a most satisfactory character. During the year 359 patients were admitted, of whom 24 died. The report states that the new Hospital had been completed during the year and was now fully equipped and in use. The building for contagious patients is also finished and is ready for use. The Lady Superintendent is Miss Blakie, a graduate of the Montreal General Hospital training school, and the House Surgeon is Dr. Stevenson. The Treasurer's report shows that the receipts from all sources were $73,750.51. This includes a donation of $25,000 and one year's interest on same of $1,250, a total of $26,250, also $1,500 from Father O'Leary. Donations and subscriptions were $3,265. Interest on invested funds, $5,914.10, and on deposits, $622.73. The cost of the Hospital during the year was $13,140.45. There was disbursed to contractors and architects for construction, $33,400. There was invested $10,000, and there is a cash balance on hand of $17,210.05. This report is a satisfactory one, but only a general summary is given. A more detailed report will doubtless be published shortly, and will be of deep interest to all who are engaged in hospital work.

We had the pleasure of visiting this Hospital last September, in company with a friend who takes a very deep interest in it. We were more than pleased with what we saw. Indeed, in many ways it was a revelation to us. Every possible convenience is in evidence, and we are of opinion that Quebec has reason to be proud of its Jeffrey Hale Hospital. Its situation is most desirable, and the view from its windows and galleries simply magnificent and not to be excelled anywhere. If scenery and splendid air contribute to recovery, as we believe they do, then the death rate of this Hospital ought to be small.

THE ROYAL VICTORIA HOSPITAL.

The annual meeting of the governors of the Royal Victoria Hospital was held on the 21st of January. This institution, as our readers are doubtless aware, is endowed and receives but little support from the outside public. The ground on which it is built was purchased, the buildings erected, and the Hospital endowed by Lord Strathcona and Mount Royal and Lord Mount Stephen. A few thousand dollars were contributed toward the object by outsiders, but practically it is as stated. Patients are admitted from every part of the Dominion on terms similar to those enjoyed by residents of Montreal. The city gave a piece of land on which to build the Hospital, but, owing to circumstances needless to recall, it was placed on adjoining land. The original site is used as breathing space. From the report of the Secretary we learn that during the year 1901 2,579 patients were admitted, of these 1,605 were Protestants, 879 Roman Catholics, 68 Jews and 27 of other faiths; 1,254 were free patients, 904 public ward patients paying 50 cents a day; 421 private ward patients; 1856 were residents of Montreal and 723 were from districts outside of Montreal. The death rate for the year was 4.42 or 3.54, deducting those who died within forty-eight hours after entering the Hospital. In the out-patient department the number treated was 3,601. The number of visits of these patients was 18,906. The income for the year was $130,738.40, while the ordinary expenditure was $112,280.20, the balance being applied towards the cost of the new power house and isolation pavilion. Already in many ways the magnificent buildings and annexes are being found inadequate. Plans are being prepared for needed extensions and improvements in operating theatre. Mr. R. B. Angus was re-elected President. Many of the governors hold office on account of the public positions which they hold. For instance, the Mayor of Montreal, the President and Manager of the Canadian Pacific, the Manager of the Grand Trunk Railway, President of the Board of Trade, are governors in virtue of the

office. The Royal Victoria Hospital is excelled by few hospitals in the world. It will forever be a magnificent monument to the liberality and public spirit of its most generous donors.

Dr. Lapthorn Smith, of Montreal, has received a letter from Professor Pestalozza, of Florence, on behalf of the Committee of Organization of the Fourth International Congress of Gynaecology, begging him to announce to the Profession of Canada that the Congress will meet in Rome from the 15th to the 21st of September of this year. The Committee of Organization consists of Professors Pasquali, Morosani and Mangiagelli, who wish to extend a hearty welcome to their Canadian brethren. The subscription fee is five dollars for gentlemen and two dollars for the ladies accompanying them. The Treasurer is Dr. La Torre, 8 Via Venti Septembre, Rome. The subjects chosen for discussion are:—1. The medical indications for the induction of labour. 2. Genital tuberculosis. 3. Hysterectomy in puerperal septicaemia. 4. Inflammatory changes in the neck of the uterus. 5. The surgical treatment of cancer of the uterus.

It is the earnest wish of the Committee to have a large attendance of Gynaecologists and Obstetricians from Canada.

Dr. James Patterson, who had charge of a large outbreak of smallpox, numbering 1,500 cases, in the west of Canada, reports that the disease was most prevalent among the unvaccinated French half-breeds; was less prevalent among the Indians, who were fairly well vaccinated, and did not appear at all among the Dhoukobor and Gallician villages, whose inhabitants had all been vaccinated in childhood, and revaccinated on board ship before entering the country.

Personals.

Dr. Robillard (McGill 1860) has resigned his position as Medical Health Officer for the City of Ottawa, Ont.

Dr. Albert A. Macdonald, of Toronto, has commenced to use an automobile in making his visits. The Doctor pronounces it a distinct success and says that he can at least save an hour in his afternoon work alone.

Dr. Francis J. E. Tetreault (M. D., Bishop's, 1880), of Orange, New Jersey, United States, was, on the 17th of January, elected President of the Orange Mountain Medical Society. We congratulate Dr. Tetreault on this manifestation of the high regard in which he is held by his confreres.

Dr. Douglas Macrae (M. D., Bishop's, 1893), who has been for several years Surgeon on the Red Star Line of Steamships sailing between Philadelphia and Liverpool was in Montreal during January last.

Dr. Tutill (M. D. Bishop's, 1901), has been appointed one of the House Surgeons of the Western General Hospital in place of Dr. Baird resigned owing to ill health. Dr. Tutill entered upon his duties early last January. He had previously served nine months as House Surgeon of the Women's Hospital.

Dr. Charles A. Hebbert, M. R. C. P., of London, has been elected Professor of Anatomy in the Medical Faculty of Bishop's College. He has for several years been Lecturer on the subject at this College and previously held a similar appointment at the Westminister Hospital Medical School, London, England. Dr. Hebbert is an exceptionally good teacher, and is not engaged in general pratice, devoting himself to consultations in medico-legal cases, in which he is an expert.

Book Reviews.

The Four Epochs of Woman's Life. A study in Hygiene, by Anna M. Galbraith. M.D., Author of "Hygiene and Physical Culture for Women;" Fellow of the New York Academy of Medicine, etc. With an Introductory Note by

John H. Musser, M.D., Professor of Clinical Medicine, University of Pennsylvania. 12 mo volume of 200 pages. Philadelphia and London, W. B. Saunders & Company, 1901. Cloth, $1.25, net. Carveth & Co., Toronto, Canadian agents.

Women have at last awakened to a sense of the penalties they have paid for their ignorance of those laws of nature which govern their physical being, and to feel keenly the necessity for instruction in the fundamental principles which underlie the epochs of their lives.

This is pre eminently the day of preventive medicine. The physician who can prevent the origin of disease is a greater benefactor than he who can lessen the mortality or suffering after the disease has occurred. Any contribution, therefore, to the physical, and hence the mental, perfection of woman should be welcome alike by her own sex, by the thoughtful citizen, by the political economist and by the hygienist.

In this instructive work are stated, in a modest, pleasing and conclusive manner, those truths of which every woman should have a thorough knowledge. Written as it is for the laity, the subject is discussed in clear, comprehensible language, readily grasped even by those most unfamiliar with medical subjects. A valuable and commendable feature of this handy volume of instructive information is a comprehensive glossary of those medical terms necessary to a thorough understanding of the subject under discussion. Without doubt, it is a book that should receive the thoughtful consideration of every woman.

F. W. C.

A Text-Book of Pharmacology, and some allied sciences (Therapeutics, Materia Medica, Pharmacy, Prescription-Writing, Toxicology, etc.), by Torald Sollman, M.D., Assistant Professor of Pharmacology in the Medical Department of Western Reserve University, Cleveland, Ohio. Illustrated. W. B. Saunders & Co., Philadelphia; Carveth & Co, Toronto, 1901, $3.75.

It is seldom a volume is issued by one author aiming to cover as much ground as is attempted in the book under review. I say attempted, advisedly, because in the 894 pages in the book the field of pharmacy, pharmacognosy, pharmacology, therapeutics, toxicology and experimental pharmacology have been brought under observation with varying degrees of completeness, so that it is rather more than a text-book and something less than a system; with the exception of Part I, dealing with the preparation and prescribing of medicine and toxicologic analysis, and Parts III (practical exercises in chemistry and experiments on animals), and IV (methods of analyzing the cause of pharmacological action), The book appeals to one as more of a teacher's or graduate's book than one fitted for the student; because the condensation essential to keeping the volume within bounds necessarily induces to a terseness and a dogmaticism of style that is foreign to the fuller scientific discussion of, as yet, undecided questions in pharmacology, and they are many

—while it pre-supposes a prior knowledge that is not necessarily possessed by the student, and, unfortunately, often not by the graduate. The question of immunity, for example, as discussed by the late Kanthak and by the author, will serve to show my meaning. The author has condensed into some seven pages a subject worthy of a monograph. The judicious use of display type, however, has enabled him to work to good advantage, and on the whole the work will be very acceptable to the teacher, and parts of it to the student. In common with most teachers of the English school, I deprecate the attempt to cover too wide a field at one sitting and prefer the more careful (if slower), process of spading and sowing one section thoroughly at a time. The distinction of the British pharmacopeal preparations from those of the United States, and the use of metre, as well as the usual weights and measures, is of the greatest use and marks the transition stage from arbitrary to scientific standards. The printing and binding are in Saunders' well-known style and call for no comment, while the price places it well within reach of every one.

R. W.

Saunders' Question Compends. Essentials of Physiology. Prepared especially for Students of Medicine, and arranged with questions following each chapter. By Sydney P. Budgett, M. D, Professor of Physiology, Medical Department of Washington University, St. Louis. 16 mo volume of 233 pages, illustrated. Philadelphia and London, W. B. Saunders & Company, 1901. Carveth & Co, Toronto. Cloth, $1.00 net.

This is an entirely new work and a worthy accession to Saunders' excellent series of Question Compends. It aims to furnish material with which students may lay a broad foundation for later amplification, and to serve as an aid to an intelligent consultation of the more elaborate text-book. The subject of Physiology is covered completely, and, the author of the work being a teacher of wide experience, the salient points are particularly emphasized. An important feature is the series of well-selected questions following each chapter, summarizing what has previously been read, and at the same time serving to fix the essential facts in the mind. In every way the work is all that could be desired as a students' aid.

F. W. C.

New Remedies and Therapeutic Measures, Wainwright's, G. P. Engelhard & Company, Chicago, 1901.

The volume before me is a very welcome addition to the physician's armamentarium. As the author truthfully says in his preface (and the admission is rather humiliating) the part of the physician's practice with which he is least familiar is pharmacology, and equally apt is his statement that the average general practitioner has not

the time to read the reports of the never ending list of new synthetic drugs placed on the market appearing in the various journals. While the vast majority of these new compounds sink into perhaps a well-merited oblivion, there are always a few that stand the test of time and experience. It is to cull these for the benefit of the busy practitioner that Mr. Wainwright has issued his booklet, and well has he done his work. I note the omission of the cocodyls from the arsenical preparations, and adrenalin from the animal extracts, although the extract of the suprarenals is mentioned. A very welcome addition, and one which may be profitably extended in the next edition, is the department of newer therapeutics—excellent articles, models of condensation, appearing as the Nauheim treatment of heart diseases, general, regional and local anæsthesia both by Schleich and spinal methods. The notes on Nirvanin deserve the consideration of those enthusiasts of the spinal method of anæsthesia. The volume contains 224 pages of printed matter, in clear type, on dull-finished paper, deckled edge, gilt top, and is a credit to the bookmaker. It should be on the desk of every physician.

R. W.

A Text-Book of Pharmacology and Therapeutics, or the action of drugs in health and diseases, by Arthur R. Cushing, M.A., M.D. (Aberdeen), Professor of Pharmacology and Therapeutics in the University of Michigan—second edition revised and enlarged, 47 engravings. Lea Bros. & Co., Philadelphia and New York, 1901.

Cushing's work is too widely and favourably known to call for more than the briefest notice. The first edition of his work was fully reviewed in this journal on its appearance over a year ago—and it is gratifying alike to his friends and himself that a work "which endeavours to explain the *reason* for drug action and to "offer a corrected and rational body of knowledge concerning "Therapeutics" has met with the measure of success it deserves. The last edition contains a few new articles and some necessary corrections of clerical errors. Not the least pleasing feature of the book is its literary style, a form of writing that finds perhaps its highest expression in the workings of Lauder Brunton, and which makes the reading a pleasure instead of a toil, while the bibliographic index at the end of the sections is valuable to those wishing to delve deeper into any subject than could, of necessity be expected in a text-book of its avowed objects.

R. W.

Venereal Diseases. A Manual for Students and Practitioners, by James R. Hayden, M.D. Third and revised edition. Lea Bros. & Co., publishers, Philadelphia, 1902.

Much of the text of this edition has been re-written and many new illustrations added. New sections on Vegetations and Herpes have appeared for the first time and are certainly a valuable addi-

tion. The arrangement, printing, illustrations and general make-up of the book is excellent. The text is very concise and not too short to be clear. Much practical advice is noticed throughout, and conflicting theories are conspicuous by their absence.

A very sensible section is that on the care of urethral instruments. The note of warning that too zealous sterilizing often renders the instruments rough and harmful to the patient may well bo remembered.

Students will find this work very useful, and the busy practitioner may review the subject without loss of time in reading this book.

G. F.

A Text-Book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Practice of Medicine and of Clinical Medicine in the Medico-Chirurgical College of Philadelphia, Attending Physician to the Medico-Chirurgical and Samaritan Hospitals, Philadelphia. W. B. Saunders & Co., Philadelphia and London, 1901; J. A. Carveth & Co., Toronto, Canadian Agents.

We have in this volume the fifth edition of a valuable and useful treatise on the Practice of Medicine. It has been carefully revised and brought into harmony with the most recent development in practical medicine. Differential diagnosis and treatment have been especially well worked out. The bacteriology of the book is up to date.

The volume consists of over twelve hundred pages and is divided into eleven parts. Infectious diseases, constitutional diseases, diseases of the blood and ductless glands, diseases of the respiratory system, diseases of the digestive system, diseases of the urinary system, diseases of the nervous system, diseases of the muscles, the intoxications, obesity and heat stroke, animal parasitic diseases. In the present edition extensive changes have been made in the infectious diseases, bringing the subject up to the most modern ideas. A few new articles have been introduced—fatty infiltration of the heart, streptococcus, pneumonia and acute diffuse interstitial nephritis.

This volume represents a very large amount of well classified labour. It is replete with useful information. Its worth is such that it should be in the hands of every student and worker in the realm of general medicine.

W. G. S.

The Medical News Pocket Formulary for 1902. By E. Reim Thornton, M.D. Demonstrator of Therapeutics, Pharmacy and Materia Medica in the Jefferson Medical College, Philadelphia. Fourth edition, revised. Lea Bros. & Co., Philadelphia and New York, 287 pages, wallet size, leather bound, with pocket and pencil, $1.50 net.

That this little pocket *vade-mecum* should have reached its fourth edition must be a source of gratification to its author who

has succeeded in getting together some 1,700 formulæ for the different conditions and ills to which the flesh is heir. It may be said of this volume as was once said of a certain story, "To those who like that sort of thing it is just the sort of thing they would like," and doubtlessly it fills a want in a certain field. It has always appealed to me, however, that its very existence is a reflection on the teaching of any university whose graduates find they need it. That there is need for it, this fourth edition bears mute but forcible testimony. When will our universities insist on the vast importance of Pharmacology and Therapeutics in qualifications of a graduate in Medicine.

R. W.

A Brief Manual of Prescription Writing in Latin or English for the use of Physicians, Pharmacists and Medical and Pharmacal Students, by M. L. Neff, A.M., M.D., Cedar Rapids, Ia. Pages v-152. Size, 8 x 5¾ inches. Extra cloth 75 cents, net, delivered. Philadelphia, Pa. F. A. Davis Co., publishers, 1914-16 Cherry street.

This little volume is a compendium of his notes in teaching prescription writing. There was no need of the statement in the preface that he "disclaimed any attempt to teach the Latin language, or such"; the fact is self-evident. Just so long as the matriculation standards of certain schools of medicine are maintained at their present level, just so long will such a booklet find sale. Of its utility after purchase there is room for personal opinion. Like the Biblical description of man, it is "fearfully and wonderfully made." Latin may suffer from the stigma of a dead language, *malgie de foel*, that it is spoken as an every-day tongue by some 30,000 people on the Eastern coast of the Adriatic, but a knowledge of it does polish the mind and broaden the intellect, hence its retention as a matriculation subject for entrance to the study of Medicine—the broadest of all sciences. It is hard to see how a matriculant, passing his latin exam., should need such a help. Should he do so, however, the low price will atone. Verily, of the making of books there is no end.

R. W.

A Practical Treatise on Diseases of the Skin, by John V. Shoemaker, M.D., LL.D. Fourth edition revised and enlarged with chromogravure plates. D. Appleton & Co., New York, 1901.

This volume groups in a concise and systematic form all the essentials of dermatology; the hypographical work and engravings are very good.

This edition has been thoroughly revised and contains many important changes and additions.

The author's classification is very complete, and the formulary for internal and external treatment most useful.

J. M. J.