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Volume 34

TORONTO, JANUARY, 1910

Number 1

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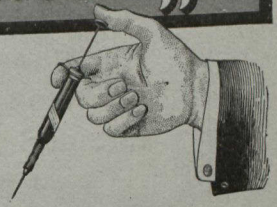
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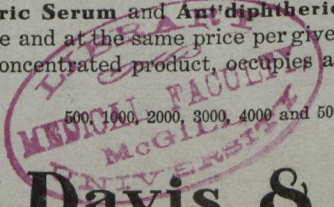
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Dominion Medical Monthly

And Ontario Medical Journal

VOL. XXXIV.

TORONTO, JANUARY, 1910.

No. 1.

Original Articles

WHAT IS CERTIFIED MILK? HOW IT MAY BE OBTAINED FOR OUR PATIENTS.*

BY HENRY T. MACHELL, M.D.,

Chairman of the Milk Commission of the Academy of Medicine, Toronto.

The term "Certified," as applied to milk, is a word coined by Dr. Henry L. Coit, of Newark, N.J., sixteen years ago. Milk conditions were bad in Newark and its outskirts at the time, and he conceived and carried out, with the assistance of his fellow-practitioners of the Essex County Medical Society, a plan of producing good fresh clean milk—milk good enough and safe enough to feed to infants, invalids and patients generally. Such a milk Dr. Coit needed very badly on which to feed his own sick baby, and such a milk it was impossible to obtain at that time.

After a number of meetings, that Medical Society appointed a commission to look into the milk question, which, after much time and thought, reported in part as follows: The objects of the Commission are: To establish correct clinical standards of purity for cow's milk; (a) to become responsible for periodical inspection of the dairy under its patronage; (b) to provide chemical and biological examinations of the milk; and (c) the frequent scrutiny of the stock by competent veterinarians.

Three general requirements or standards of *quality* for the milk were formulated: 1st, an absence of large numbers of micro-organisms and the entire freedom of the milk from pathogenic varieties; 2nd, unvarying resistance to early fermentative change in the milk, so that it may be kept under ordinary conditions without extraordinary care; 3rd, having a constant nutritive value of

*Read at Canadian Medical Association, Winnipeg, August, 1909.

known chemical composition and a uniform relation between the percentages of the fats, carbo-hydrate and proteids, *Archives of Pediatrics*, November, 1907.

It sought to accomplish these results through a Medical Milk Commission "who shall supervise and direct the methods employed by dairymen."

Only one milkman was found who would undertake to deliver milk up to the requirements of this commission, and a strict legal contract was made with him containing some 68 clauses. He has continued since that time to produce a satisfactory quality of milk.

Stripped of its legal phraseology, the main features of this agreement are: That, in consideration of the promised endorsement of the Commission, the dairyman will collect and handle the product of his dairy in conformity with the code drawn up by the Commission; that he will pay for chemical, bacteriological, and veterinary examinations by persons chosen by the Commission; that he shall meet all necessary expenditure for printing, etc. Other parts of the agreement relate to the location of the lands, the buildings, the water supply, the surroundings, the housing and care, the feeding, the collecting and handling, the preparation for shipment, the transportation and delivery, etc. Failure to comply with any or all requirements, the Commission reserves the right to withdraw from contract, and publish the fact in such manner as is deemed best. The dairyman shall be at liberty to cancel the agreement by giving two months' notice in writing.

This agreement to produce "Certified milk" has been in existence and the plan has been in active operation for sixteen years.

It was organized by the profession to promote only professional and public interests.

The members of the Commission disclaimed any pecuniary interest in the sale of the product, and assumed no obligations except the enforcement of the contract and the publication *among physicians* of the findings of their experts."

By the action of the Medical Milk Commission of Essex County the term was copyrighted by the dairyman who undertook to produce "Certified milk," the object being to protect the term from being degraded by dairymen not in contract with a Medical Milk Commission. It was distinctly understood, however, that the term should be allowed without question when employed by a Medical Milk Commission organized to influence dairy work for clinical purposes. "Certified milk" then, in the strict sense of the term, is milk produced under legal contract or simply under an agreement between a Medical Milk Commission and a dairy, and which con-

forms to the requirements. It may be said further, that milk entitled to be certified is clean and wholesome, and is obtained from healthy cows which are kept in sanitary quarters, fed good food, and given pure water. It is drawn from clean cows by clean, healthy attendants, into clean receptacles, and in a clean atmosphere. It is handled in a clean manner, cooled quickly, put into sterile vessels, placed in cold storage, and iced in transportation when necessary."

I have given these details of the Medical Milk Commission of Essex County at considerable length, because it has been the basis on which nearly all the Milk Commissions in the U. S. have been established.

Up to February, 1906, that is thirteen years from the organization of the first Commission, only 14 such Commissions had been organized.

In the year 1907 six more were put in active operation, and in 1908, twelve. In the first five months of this year 14 more were added to the number, making in all 56 up to June 7th, when the meeting of the American Association of Medical Milk Commissions took place at Atlantic City. They extend from Boston in the East to Santa Barbara in the West, and from Colorado Springs in the North to Jacksonville in the South.

In New York State the term "Certified Milk has become legalized, and a penalty is imposed for the sale of certified milk which does not conform to the regulations prescribed for and bear the certification of a Medical Milk Commission. All milk sold as certified shall be conspicuously marked with the name of the Commission certifying it." Kentucky also has passed a law regarding certified milk. In April last New Jersey passed "an act providing for the incorporation of Medical Milk Commissions and the certification of milk produced under their supervision."

The *expenses* of the Commissions are met in several ways, one of the most common being the sale of caps at from \$4 to \$5 per M.; one Commission charges \$6 per month; one charges \$5 for each chemical and bacteriological examination, and \$10 for each veterinary inspection. One simply sends all bills to the dairyman, and one charges a tax of one-half cent per quart for certification. In Toronto each dairy buys its own pulp caps and parchment covers, has them printed and sterilizes them at its own plant.

The additional cost to the consumer in the U. S. has varied from 3 to 8 cents per quart. The average additional advance has been about 5 cents per quart above the cost of ordinary market milk. It is put up in quarts and pints. The Gooderham dairy,

however, has made a new departure and now puts up half-pints; of these the King Edward Hotel alone takes 100 per day.

The supply exceeds the demand. At present the citizens of Toronto call for only 1,107 quarts and 417 pints per week. In addition to the above, Price & Sons send it to the summer cottages on Lake Simcoe, forty miles from Toronto, and to the Royal Muskoka Hotel, 100 miles. While this amount seems a trifle distributed over a city of a third of a million people, it must not be forgotten that we have only been certifying to the milk of the first dairy since February last, and to the second since the 20th of May.

How may it be obtained? I do not know that I can answer this question better than by giving a short history of the method followed by the "Milk Commission of the Academy of Medicine, Toronto." This Commission was appointed by the Academy in October last. After organizing we adopted the following requirements: The herd is to be tuberculin tested on admission, and twice yearly afterwards by a veterinary surgeon appointed by the Commission; he is also to make a monthly inspection of the herd as to illness, such as mastitis, etc. The bacteriological count is to be less than 5,000 per cubic centimeter from October to May and less than 10,000 during the hot months, June, July, August and September. The chemical examination is to show that the fats and proteids average 4%, but a variation of $\frac{1}{2}$ % of 1% above or below that point is allowed. The total solids are not to fall short of 12 to 13%. The milk is to be cooled to 45° F. within half an hour after milking and kept at that temperature till delivered to the customer, which must be within 24 hours. It is neither to be heated nor frozen, nor is any preservative to be added. The dairy is to be visited each month by "the physician for the month," who reports as to indisposition or illness among employees; the driver is to hand out of his delivery wagon a bottle for examination whenever asked for by the Secretary of the Commission.

After deciding among ourselves what our requirements should be to safeguard the milk, and therefore our patients, we sent out a circular letter to about 200 dairymen who have to do with Toronto's milk supply. As a result of our circular we were consulted by a number of them, who thought they would like to produce certified milk. Some thought we were too particular, some that it was too much trouble, and others that there was not enough money in it for the extra trouble, etc. Finally three firms seemed much in earnest and decided they would put their plants in shape and make the attempt to meet our requirements.

One large item of expense—the monthly cost of a bacteriological and chemical examination of the milk—we have been able to save

to our dairies through the kindness of the Hon. Mr. Hanna, the Provincial Secretary, who has allowed our Commission to make use of the laboratories of the Provincial Board of Health of Ontario for such examinations free of charge. Instead of paying someone to collect the monthly or bi-monthly samples from the wagons for examination, the Secretary of our Commission has volunteered to do this, and thus again our dairies are saved another expense.

The "physician for the month"—a member of the Commission—who goes out into the country and reports as to the health of the attendants, etc., does so without remuneration. The same may be said of the Commission as a whole. No member receives any compensation directly or indirectly for his services. In New Jersey it is a penal offence to do so, and the fine is \$100.

Our veterinary inspector charges \$10 per day for tuberculin testing the herd. On one occasion he tested 75 in one day of 24 hours—a big day's work. The tuberculin is extra and so are the broken thermometers. For his regular monthly visit the charge is the same. This is an easy day's work, but it offsets the heavy day's work. Transportation, usually by automobile, is provided by the dairy for both the physician and the veterinary.

Two large dairies are now producing certified milk well within the requirements adopted by our Commission: The first, S. Price & Sons, at Erindale Farm, about 18 miles; the second, Gordon S. Gooderham, at Manor Farm, York Mills, 6 miles from Toronto. A third dairy, the City Dairy, whose herd has been tuberculin tested, expects to qualify within a few weeks.

Since the first certificate was issued, 4th February last, the bacteriological counts are:

Erindale Farm—February, 1,900; March, 450; April, 850; May, 2,860; June, 3,100; July, 1,800. (No ice used up to the June examination.)

Manor Farm—May, 600; June, 860; July, 3,000.

These are records of which any dairy may justly feel proud.

That our certified milk in Toronto may be ranked among the best is evidenced by the fact that at the recent milk contest in charge of the Dairy Division, U. S. Department of Agriculture, Washington, D.C., held in Cincinnati in April last, and to which all known producers of certified milk were invited, Price & Sons took *third* place with 95 points out of a possible 100, and with only $1\frac{1}{2}$ points below the dairy awarded first place, and the trophy presented by the American Association of Medical Milk Commissions.

Physicians in Toronto are now able to obtain for their patients milk of a high grade quality, and in the near future our mortality, to say nothing of our morbidity, ought to be materially lessened.

One thing, and one thing only, to my mind, which will interfere with the more general use of certified milk for infants, invalids and growing children, is the cost. Who of us here, if we had an ill baby at home, would not willingly pay the extra few cents per quart to have the food clean and fresh?

If this applies to babies during illness, it does also to those who are well, for it is one of the best means of keeping them in good health—it is preventive feeding. With infants and infant feeding, it is much easier to keep them from getting ill than to help them after their digestive tract is damaged by the average commercial city milk, which many of us know to be teeming with bacteria.

Shortly after the organization of our Commission, the following institutions sent samples of their daily milk supply to Prof. Amyot of the Laboratories of the Provincial Board of Health, Toronto, for examination: The Hospital for Sick Children, Infants' Home, Home for Incurable Children, Toronto General Hospital, Western Hospital, St. Michael's Hospital, St. John's Hospital for Women, Grace Hospital, etc. More than one bacteriological count was made for some of the institutions. Taken at random, these milks showed to the cubic centimeter (about 16 drops) 1,500,000, 1,200,000, 83,200, 4,500,000, 6,500,000, 310,000, 18,900, 200,000, 17,600, 120,000, 280,000, 90,000, 254,000,000 bacteria.

These figures show that Toronto hospitals were not getting clean milk. They show also that those in the community—the patients—who above all others need it, are not getting it. This is especially the case when we see that three of the seven institutions above-named have to do entirely with infants and children. As the Chairman of the Board of Trustees of one hospital said, "It is like feeding our children on milk sewage."

What is true of Toronto holds good, in all probability, of the majority of cities and towns in the Dominion.

The "Medical Society Milk Commission" and the "Certified Milk" plan is a means by which we physicians can secure a food which ought to be the main article of diet of our patients, particularly those under three years of age. It must be produced under the supervision of a regularly organized medical society or an academy of medicine, and be responsible solely to that Society. No legal formalities have to be gone through, and no municipalities, with the frequent vexatious delays and postponements, need be consulted. There may be merely a mutual understanding, which is all we have in Toronto, or a contract signed, sealed and delivered in proper legal phraseology, between a milk producer and a commission. The experience of the past has been that it is easier to form

a commission and decide upon a standard than to find a dairyman who will agree to live up to it.

While the Academy of Medicine, Toronto, through its Commission, was the first medical body in Canada to give its members an opportunity to obtain certified milk for their patients, I see no reason why the majority of the medical societies throughout this broad Dominion might not make it possible to have certified milk for their patients before the meeting of this Association next year.

(Samples of cards in use by the Commission were exhibited. Samples of milk produced by Erindale and Manor Farms, milked 16th August and expressed iced that day to Winnipeg, were also exhibited and found in first-class condition (23rd August)—just as good a condition as when they left Toronto, judging by sight, smell and taste.

A CASE OF SEVERE TETANUS, WITH RECOVERY.*

BY ALEXANDER BELL, M.D.,

Vice-President Sarnia Medical Library Association.

It is a pleasure, I can assure you, to be honored by an invitation from your Secretary to report a severe case of tetanus and its recovery. Tetanus is, as you are all aware, an infectious disease, though not as common as pneumonia, measles, typhoid, la grippe, septicemia, erysipelas, etc., yet much more fatal, different reports placing the mortality at from 80 to 90 per cent. It is more of the nature of hydrophobia, and resembles strychnine poisoning somewhat, and it is almost equally fatal, unless prophylaxis is instituted before the disease has become well established and marked symptoms have developed. Although not of common occurrence, yet within the last year we have heard of several isolated cases in various parts of our province, all or nearly all of which have been reported fatal. I therefore take some pleasure in reporting this recovery.

On the evening of September 14th, I was consulted over the 'phone regarding a young lad, B. W., aged eleven years, suffering with a pain in his abdomen or "stomach," as they put it. They had given him castor oil and enemas without success, and therefore had called me up to know what to do. I said I had better

see him, and went up accordingly. It was while examining the boy that I observed that there was something much more serious the matter than a pain in his stomach and constipation. I observed that he could not open his mouth more than a quarter of an inch, and could only put out his tongue about the same distance. His temperature was 100 degrees, pulse 90 and respirations 20. I also observed that about every half minute he was having a severe clonic spasm, at which time the mouth would shut tight with a peculiar click in his throat; that peculiar look on his face called "Risus Sardonius" was well marked, and he would call out after the spasm, "Oh! my stomach." This pain in the stomach seemed to be due to the extreme tension on the abdominal muscles, which, I observed, were continuous in a state of extreme tension or tonic spasm. On further examination I found that all the muscles of the back were extremely rigid, or, in other words, the boy's position was that of opisthotonos. It now occurred to me that I had to deal with tetanus or lockjaw. I inquired if the boy had recently received an injury, and the grandmother replied that he had fallen and cut his knee on the gravel walk on September 2, 1909, and that she had healed it with "Zambuk." So I examined the knee, to find a wound then scabbed over, but not healed. It was about half by three-quarters of an inch in size. It looked as though it had been a bruised cut such as would have been caused by a fall on a stone. I then elicited the following facts: On Saturday, September 11th, the ninth day after the injury, the boy began to complain of his jaws being stiff and sore. The grandmother thought he was taking mumps, and rubbed on some home remedy. Sunday, September 12th, he said his jaws were somewhat stiffer and that his neck began to get sore. Monday, September 13th, he complained to his father, saying: "There, father, is another thing coming to me; I bit my tongue last night." He also began to complain of pain in his stomach, and said he was very tired, and would not go out with the other children. On Tuesday, September 14th, the fourth day of the disease, the symptoms were all exaggerated, and he was as I have described him when I was called at 7.30 p.m.

I now gave him $\frac{1}{4}$ gr. of morphia, 2 grs. of calomel and soda each, and ordered him 2 drams of Epsom salts to be taken at midnight, and scrubbed out the wound thoroughly and dressed it with balsam of Peru. At 8.30 the same evening I took Dr. McDonald up to see him, and he agreed with my diagnosis of tetanus; and I gave 1,500 units of P. D. & Co.'s antitetanic serum and 8 grs. of chloral and 10 of triple bromide, and $\frac{1}{8}$ gr. of morphia, to be given every three hours all night.

Dr. McDonald drew my attention to an article in the *Journal of Surgery, Gynaecology and Obstetrics*, of Chicago, by Wm. Hessert, of Chicago, in which he reports fifteen cases treated by intra-spinal injection of 25 per cent. sterilized magnesium sulphate solution. The dosage of this has been arrived at experimentally as follows: Of the 25 per cent. sterile solution of magnesium sulphate 1 c.c. is injected by lumbar puncture for every 20 lbs. body weight in men. For women and children the proportion is 1 c.c. solution for every 25 lbs. of body weight. It is best with the first injection to be very cautious and ascertain the tolerance of the drug. The initial dose should be rather smaller than the proportions just given, for if too large it will result in paralysis of the heart and respiratory centres. As this case seemed a most serious one, I decided to try this injection if the symptoms were not some better in the morning.

On Wednesday, September 15th, I saw him at 8.30 a.m. He had had a very poor night; the clonic spasms were not quite so frequent, but would occur on the slightest irritation, such as noise on the street, trying to drink, or touching him in any way. So I had Dr. McDonald chloroform him while I injected 2 c.c. of the sterile 25 per cent. magnesium sulphate solution by lumbar puncture (the boy weighing 70 lbs.). I also continued giving him the chloral and bromide all day, but no morphine. At 7 p.m. he was slightly relaxed, but was still having quite severe clonic spasms, though much less frequent. There was retention of urine, and he had to be catheterized. I then gave him 1,500 units antitetanic serum and 6 c. c. of the 25 per cent. magnesium sulphate solution subcutaneously, as he was still in a severe tonic condition. Having seen another article in the July number of the *Chicago Journal of Surgery, Gynaecology and Obstetrics* by Willard H. Hutchings, M.D., of Detroit, on the use of chloretone to relax the spasms of tetanus, I decided to give one dram chloretone, dissolved in two ounces of hot sweet oil, injected into the rectum. This, however, was not retained, and at 11.45 the same evening he was very restless until the bowels were thoroughly washed out by normal saline.

Thursday, September 16th, I saw him at 9 a.m. He was very irritable and restless, though he was reported to have slept well from midnight to 6 a.m. His temperature was 97 by the axilla (all temperatures in this case were taken by axilla), pulse 90, respirations 20. His jaws, though still locked, could be opened about half an inch. The abdominal, back and neck muscles were still rigid, but not so much so as on the previous evening. He still had to be catheterized, and, under chloroform, I

again injected by lumbar puncture 3 c.c. of the magnesium sulphate solution, and removed him to Sarnia General Hospital. When put to bed here he was given continuous saline solution by the bowel by the drop method, this being given continuously during his sickness, and he would absorb from 5 to 6 pints in each twenty-four hours. At 11.30 a.m. he awoke from the chloroform, complaining of severe pain in the bowels, which was undoubtedly due to the severe spasms of the muscles. At 12 a.m. he was given 4 oz. of beef tea, which he swallowed somewhat better than he had done at any time in the two days previous. At 1 p.m. he fell asleep and slept till 6.30 p.m., being quite relaxed in all his muscles during this time. The urine was now known to be passed involuntarily and profuse, and continued so for several successive days. Also he was having from two to four involuntary stools daily from this on, produced by giving 1 oz. of castor oil or 2 drs. kasagra daily. At 7 p.m., September 16th, he had 1,500 units of serum; the muscles were still quite relaxed, but some slight spasms would be noticed if he were bothered in any way. His temperature was 97 3-5 degrees, pulse 90, respirations 18. At 9.30 p.m. he was becoming very restless, so I decided to give him 30 grs. chloretone dissolved in hot oil per rectum, which was retained, and he slept at short intervals all night, but would have some spasms when disturbed by the nurse for nourishment. He took a cup of beef tea or albumen water every three hours.

Friday, September 17th, 6 a.m., T. 97 3-5, P. 90, R. 20. At 8.30 a.m. his spasms were quite severe, and the extensor muscles were quite rigid. I gave 30 grs. chloretone dissolved in oil per rectum, but it was not retained. At 10 a.m. I gave 4 c.c. of the 25 per cent. sterile solution of magnesium solution by lumbar puncture. By 11 a.m. the patient was quite relaxed and took some ice cream. By 12 a.m., T. 100 degrees, P. 96, R. 20, and the patient was asleep. 2 p.m., patient still sleeping, grinding his teeth; neck, jaws and back muscles were quite relaxed, but the abdomen was much distended, so I gave him chloretone 1 dr., dissolved in oil per rectum, which was expelled. 6 p.m., he was resting quietly, and very drowsy and limp, and the conjunctivas were becoming injected. His temperature was 99 3-5 degrees, pulse 70 and respirations 20. He was given 1,500 units of serum. He was not swallowing sufficient nourishment, I thought, so from now on for several days he was fed every six hours with 8 oz. of milk and one whole egg beaten up together and put into the stomach by means of a catheter passed through the nose into the stomach.

Saturday, September 18th, 1.30 a.m. : Patient very restless, but sleeping; T. 100 degrees, P. 70, R. 22. 6 a.m., T. 100 4-5 degrees, P. 88, R. 24; patient in a stupor, would not swallow, conjunctivas very red. 10 a.m., gave serum 1,500 units, and 6 c.c. of the 25 per cent. magnesium sulphate solution subcutaneously, as the patient had had several slight spasms while working with him, but he was otherwise quite relaxed in all his muscles. 2 p.m., T. 102 2-5 degrees, P. 128, R. 24, the patient resting and asked for ice cream. Took 2 oz. At 4 p.m. his T. 103 degrees, P. 126, R. 32. I now ordered him digitalin, 1-100 of a grain, and adrenalin chloride 6 gtt., given hypodermically every four hours if pulse was over 110, and phenacetin grs. 4 by mouth if temperature were over 102, every four hours, together with a hot sponge bath. This was done, and at 6 p.m. his temperature was 101 2-5 degrees, pulse 110, respirations 12. The respirations were now noted to be very shallow. Patient was very restless, and kept calling out loud and seemed to be in a stupor, but his muscles remained relaxed, but he refused to swallow. 10 p.m., T. 102 2-5 degrees, P. 114 and irregular, R. 36. He was given his phenacetin and hypo. and hot sponge, but had some slight spasms while being given them. Otherwise the muscles were quite relaxed and the abdomen soft. 11 p.m., T. 100 3-5 degrees, P. 104, R. 36 and shallow.

Sunday, September 19th, 2 a.m., T. 100 1-5 degrees, P. 96, R. 36. Still in a stupor, but had several spasms while working with him, so he was given 20 grs. chloretone dissolved in half ounce of whiskey with his milk and egg into the stomach. I also now ordered him to be given 11½ drs. of a 1 per cent. solution of carbolic acid hypodermically every 2½ hours, to be given along the spinal column, which were continued from now on daily, and I also increased his serum from 1,500 units in the 24 hours to 3,000 units in the 24 hours. At 6 a.m., T. 100 4-5 degrees, P. 120, R. 36. He was given his hypo. of digitalin and adrenalin. Patient coughing, phlegm in throat. The wound, which had been dressed daily with balsam of Peru, was now completely healed. Though he was still in a stupor or sleeping, he was quite relaxed in all his muscles, but would have a spasm whenever anything were done for him, so I again gave him chloretone dissolved in whiskey, half ounce, with his milk, at 10 a.m. His temperature was now 100 degrees, pulse 116, respirations 28. By 1 p.m. his temperature was 104 degrees, pulse 138, respirations 50, which were very irregular and shallow. He was now given his hypo., and 5 grs. of phenacetin were given by mouth. It now occurred to me that chloretone was having a bad effect on the patient's

respiration, so I gave no more. 3 p.m., T. 103 1-5 degrees, P. 140, R. 38. He was given a hot pack. 6 p.m., T. 102 2-5 degrees, P. 144, R. 42. He was given his hypo., and phenacetin grs. 5, and his hot pack. 10 p.m., T. 102 4-5 degrees, P. 128, R. 42. He was again given his hot pack, and phenacetin grs. 5 and his hypo. He was showing signs of the spasms increasing, so I gave him 6 c.c.'s of the magnesium sulphate solution subcutaneously. At 11 p.m., spasms were less, he was quite relaxed and sleeping comfortably.

September 20th, 2 a.m., T. 103 1-5 degrees, P. 120, R. 48. He was given his phenacetin grs. 5, his hypo., and hot sponge bath. 3 a.m., his temperature was 101 degrees, pulse 118, respirations 40, which were very shallow. 6 a.m., T. 101 2-5 degrees, P. 130, R. 48; he was again given his hypo., but no phenacetin. 10 a.m., temperature was 103, P. 142, R. 40. He was now given phenacetin grs. 5, and his hypo. He was still sleeping, was completely relaxed, but had slight spasm when touched. 2 p.m., T. 104 degrees, P. 138, R. 42. He was given his phenacetin grs. 5 and his usual hypo. His conjunctivas were noted to be very red still. The superficial reflexes were noted to be all absent, but the pupillary reflex was present. 5 p.m., T. 105 degrees, P. 146, R. 42. He was given his phenacetin grs. 5, his hypo. and his hot sponge bath. 7 p.m., T. 103 4-5 degrees, P. 146, R. 42. 10 p.m., T. 105 degrees, P. 148, R. 54. He was given his phenacetin grs. 5 and his hypo.

September 21st, 2 a.m., T. 104 2-5 degrees, P. 124, R. 48. He was given his phenacetin grs. 5, his hot sponge bath and his hypo. 6 a.m., T. 104 4-5 degrees, P. 128, R. 48. He was given his phenacetin, his hot sponge bath and his hypo. Patient had been very restless all night, and there was observed to be frequent twitchings of his limbs. 10 a.m., T. 105 degrees, P. 144, R. 46. He was given his phenacetin his hot sponge and his hypo. 2 p.m., T. 105 2-5 degrees, P. 140, R. 46. He was again given his phenacetin grs. 5, a hot sponge and usual hypo. 5.30 p.m., T. 106 degrees, P. 148, R. 48. The respirations were very shallow, patient was very limp and relaxed. He was given a hot pack, his phenacetin grs. 5, aspirin grs. 8 by mouth in capsule, which he swallowed with difficulty. He was also given his usual hypo. At 7 p.m. his temperature had gone up to 107 degrees, so I ordered him a pint of ice-cold water as an enema, which he expelled in half an hour. At 7.30 his temperature had fallen to 104 degrees. At 8.30 temperature was 103 degrees. 10 p.m., temperature again going up and was now 105 degrees, pulse 114, respirations 48. One pint of ice water

was ordered as an enema, which was retained half hour. He was also given aspirin grs. 8, phenacetin grs. 5 by mouth, with his usual hypo. While giving these the patient had three severe spasms, otherwise was quite relaxed. 11 p.m., temperature down to 103 degrees, the abdomen was very much distended. The rectal tube was passed, and he was relieved of much flatus.

September 22nd, 2 a.m., T. 102 degrees, P. 124, R. 42. He was given phenacetin grs. 5, aspirin grs. 8 by mouth, and his usual hypo. While giving these the patient had a severe spasm, but was otherwise quite relaxed. 9 a.m., temperature still dropping, being now 102 degrees, pulse 128, respirations 36. He was again given one pint ice water enema, and phenacetin grs. 5 by mouth, and his usual hypo. The conjunctivas were still very red. Fearing some meningital complication, I aspirated by lumbar puncture half ounce of spinal fluid, which was quite clear and normal in every respect, while doing which, without an anesthetic, he had a spasm, which was only slight. It was now noted that instead of incontinence of urine he had retention. The catheter was passed, drawing off 18 oz. He had to be catheterized daily now for the next two or three days. 10.30 a.m., T. 100 degrees, P. 110, R. 30. Patient was much better, spoke to the nurse and asked for ice cream. His muscles were still quite relaxed, and he had no spasm while passing the catheter through the nose into the stomach. 2 p.m., T. 101 1-5 degrees, P. 112, R. 38. He was again given, by mouth aspirin grs. 8 and phenacetin grs. 5, and his usual hypo. 6 p.m., temperature again showed an inclination to advance, and became 103 degrees. He was given one pint of ice water by enema, which was retained half hour, and 5 grs. phenacetin by mouth. At 7 p.m. his temperature was 100 4-5 degrees, pulse 100, respirations 36. At 10 p.m. temperature had again gone up to 103 1-5 degrees, pulse 120, respirations 36. Patient was now observed to be perspiring freely for the first time, his skin at all times previous having been very dry. He was now given, by mouth, phenacetin grs. 5, aspirin grs. 8, and his usual hypo.

September 23rd, 12.30 a.m., his temperature was 103 4-5 degrees. He was given an ice-water enema, one pint of which he retained half hour. At 2 a.m. his temperature was 101 degrees, pulse 120, respirations 40. The patient had some very slight spasms while being worked with, and was coughing considerably. The lungs were examined, but were found to be quite clear, the cough coming from the throat. 3 a.m., T. 103 degrees. He was given one pint ice-water enema, which was retained only about half an hour. 4 a.m., temperature 104 degrees. He was

again given ice-water enema, and by mouth phenacetin grs. 5 and aspirin grs. 8. 6 a.m., T. 102 degrees, P. 118, R. 42. Patient was quite relaxed all night, but had three slight spasms while working with him at that time. He was given his usual hypo. 9-30 a.m., T. 101 3-5 degrees, P. 112, R. 48. Patient roused somewhat from his stupor through the night, and swallowed much better. He was still perspiring profusely. This was evidently the crisis, since the temperature from this time on kept gradually on the decline, with at no time any further increase. Also the pulse and respirations continued to improve, so that from this on he required no hypos., nor phenacetin, nor aspirin, nor temperature baths, nor enemas, but his carbolic injections were still continued, as was also his continuous saline, and we also continued to give him his milk and egg by catheter into the stomach. The serum was continued still at 3,000 units per day. 11 a.m., T. 100 1-5 degrees, P. 102, R. 34. 2 p.m., T. 100 3-5 degrees, P. 108, R. 40. 6 p.m., T. 100 2-5 degrees, P. 108, R. 40. 10 p.m., T. 100 degrees, P. 108, R. 36.

September 24th, 2 a.m., T. 99 3-5 degrees, P. 98, R. 36. 6 a.m., T. 99 4-5 degrees, P. 96, R. 30. As some spasms were still present when worked with, I gave him again 10 grs. chloretone in half-ounce whiskey, by mouth. 6 p.m., T. 98 3-5 degrees, P. 120, R. 46. 10 p.m., T. 99 1-5 degrees, P. 118, R. 48. Gave patient 10 grs. chloretone by mouth.

September 25th, 2 a.m., T. 99 3-5 degrees, P. 108, R. 36. 6 a.m., T. 99 4-5 degrees, P. 108, R. 38. Patient was very restless all night and had some slight spasms. 10 a.m., T. 99 3-5 degrees, P. 108, R. 40. As there were still some slight spasms, and as the chloretone, to my mind, had shown a bad effect on pulse and respirations, I therefore gave him 6 c.c.s of the 25 per cent. sterilized magnesium sulphate solution subcutaneously at the same time as I had given him his serum. At 2 p.m. his temperature was 99 2-5 degrees, P. 114, R. 38. 6 p.m., T. 99 2-5 degrees, P. 108, R. 34. Patient resting quietly and still relaxed, no spasm noted all afternoon. 10 p.m., T. 98, P. 98, R. 30.

September 26th, 2 a.m., T. 98 degrees, P. 88, R. 36. Patient still relaxed in all his muscles and sleeping quite naturally. 6 a.m., T. 98 degrees, P. 96, R. 34. Patient had slept well all night. Swallowed without difficulty all nourishment by the mouth, so now stopped forcing his food into the stomach by catheter. Patient now asks for bed pan and urinal. 2 p.m., T. 99 3-5 degrees, P. 114, R. 38. 6 p.m., T. 99 3-5 degrees, P. 108, R. 34. 10 p.m., T. 99 degrees, P. 98, R. 30.

September 26th, 2 a.m., T. 98 degrees, P. 88, R. 36. 6 a.m.,

T. 98 degrees, P. 96, R. 34. Patient had a good night, slept all night. 10 a.m., T. 97 degrees, P. 102, R. 30. 2 p.m., T. 97 3-5 degrees, by mouth, P. 92, R. 30. 10 p.m., T. 99 3-5 degrees, P. 96, R. 36. Patient coughing considerably, had a slight spasm when given carbolic hypo. this evening.

September 27th, 2 a.m., T. 99 degrees, P. 90, R. 30. 6 a.m., T. 98 degrees, P. 88, R. 30. Patient had a very good night and no spasms. 10 a.m., T. 98 3-5 degrees, P. 84, R. 24. 2 p.m., T. 98 3-5 degrees, P. 84, R. 34. 6 p.m., T. 99 2-5 degrees, P. 108, R. 26. 10 p.m., T. 98 4-5 degrees, P. 88, R. 28.

September 28th, 6 a.m., T. 98 degrees, P. 90, R. 26. Patient had slept well all night and no spasms. The serum which had been given in 3,000 units every 24 hours for the last ten days was now discontinued, as also was the continuous saline, the carbolic hypo. being kept up every three hours in the day for the next week. He had been given in all 37,500 units of antitetanic serum.

From this on the boy made an uneventful recovery, leaving the hospital October 7th.

The treatment in this case, I am sorry to say, although successful, has been somewhat complicated. But as it was a desperate case and a human life was at stake, I did not hesitate to use the best remedies that ever had been recommended for the disease, and I would draw from their use the following conclusions:

1st. That I consider morphine, chloral and bromide almost useless to control the spasms of tetanus.

2nd. That I consider chloretone by mouth dissolved in whiskey quite potent in relaxing the spasms, and chloretone dissolved in hot oil and given by bowel I consider uncertain.

3rd. That I consider lumbar puncture of 25 per cent. sterilized magnesium sulphate solution given as recommended in Dr. Hessart's article in the *Journal of Surgery, Gynecology and Obstetrics*, of August, 1909, as equally effective in relaxing the spasms. Also that this solution given subcutaneously is effective, but less rapid in action.

4th. That the ice cold enema was of remarkable value in the reduction of extremely high temperature.

5th. That antitetanic serum should be given in much larger doses than 1,500 units in the 24 hours to produce its best curative effect.

6th. I am at loss to know which of the two, serum or carbolic acid was the means of finally curing this severe case of tetanus.

A NEW TREATMENT FOR ABDOMINAL SURGICAL SHOCK.

By JOHN R. HOPKINS, M.B. (TOR.),
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As the problem of the cause of shock now stands, there are many contradictory theories.

It is best for me to state at the beginning of this paper that the case that I will report later, together with my investigations, have proven to my satisfaction that in surgical shock the peripheral vessels are contracted and the vessels in the splanchnic area are dilated. And the vasomotor nerve mechanism is not paralysed, but is injured sufficiently to lose its reason or function instead of acting in its long accustomed extremely intelligent and prompt manner, in distributing the right amount of blood to the right places at the right times, which is essential to life. There is not nearly enough blood in the body to fill all the blood vessels at once if they were all dilated. Goltz in his famous experiment showed that if a frog be suspended in the upright position and its heart exposed, a blow upon the abdomen has a two-fold action, (1) it stops the heart reflexly through the vagus; but after this effect has passed off (2) the heart beats again, but is empty and sends on no blood into the vessels, because the blow has caused dilation of the abdominal vessels, and all the blood becomes stored up in them, so that none reaches the heart.

Besides the chief vasomotor centres in the medulla there are subsidiary centres in the spinal cord, and Goltz² and Ewald have shown that the ganglionic chain of the sympathetic can assume the function of the vasomotor centres.

³When the centres or nervous trunks of the vasomotor nerves are irritated, the vessels contract.

⁴Section of the splanchnic nerves causes an immediate and sharp fall of blood pressure. The intestinal arteries, veins and portal vein are dilated and over-filled with blood. As a necessary consequence of their immense capacity the rest of the vascular system is under-filled, and the blood pressure falls accordingly. Stimulation of the peripheral end of the splanchnic nerves causes a great rise of blood pressure owing to the constriction of the vessels in the intestinal area. This shows that the vasomotor fibres in the splanchnic nerves are mainly of the constrictor type,

also that the splanchnic area serves to a great extent as a regulator of blood pressure.

⁵Mall has shown that the splanchnic nerves contain vasoconstrictor fibres for the portal vein, and Ludwig and Lauder Brunton have shown that the liver in the living is much like a sponge, i.e., can accommodate much blood.

⁶Almost all the cells of the solar plexus are included in the course of the fibres of the splanchnic nerves (Landois). Elevation of temperature, also fever causes irritation of the splanchnic nerves. (Landois).

One of the principal functions of the vasomotor nerve mechanism is the proper distributing of the blood in order to preserve the normal temperature of the body. Eighty per cent. of the heat expenditure of the body is through the skin. So when for any reason more than the normal heat or temperature occurs in the body it is a function of the vasomotor nerve mechanism to at once correct it, but it does not always do it. The elevation of temperature causes irritation of the splanchnic nerves, sympathetic ganglia and vasomotor centres so that orders are usually sent at once to correct the situation; the heart beats faster and peripheral vessels dilate; thus more blood is gotten to the surface to radiate and evaporate heat.

This treatment which I advocate is especially suitable for shock during the few hours or days following an abdominal operation, when the patient is not under an anesthetic, although it is probably beneficial when the patient is anesthetized, but not to so great a degree. It is as follows:

Take out two skin sutures as near the umbilicus as the wound will permit, then pry apart the continuous sutures in the fascia and peritoneum. You can now see if hemorrhage is present. This procedure is not difficult nor very painful because when patients are in shock they are more or less insensible to the causes of ordinary pain. See that a nurse has ready very hot and cold normal salt solution, reservoir with four feet of rubber tubing, together with a glass tube or cannula six to eight inches long. Both rubber and glass tubes should have a diameter of 1-3 to $\frac{1}{2}$ inch. Have a quart of saline solution at temperature of 112 Fahr. in reservoir which should hang three feet higher than abdomen. Now have wound held open so that you can see omentum or intestines, also see that the tube and the cannula are now full of the hot solution, then insert the long cannula beneath the omentum, if possible, pushing it upward so that your glass tube penetrates to the posterior peritoneum up behind the transverse mesocolon

to the neighborhood of the posterior wall of the stomach, getting as near to the solar plexus as possible. The solution still at 112 Fahr. is now allowed to run in as rapidly as it will. Probably a pint will fill the abdomen and be enough. This will take only five or six seconds. Now during the first two or three seconds of this time the patient feels little or no pain; only feels that the hot solution is permeating among the intestines; but the remaining two or three seconds is much different—the pain is very severe, for then the splanchnic nerves, the solar and hypogastric plexuses are being strongly irritated by the heat and pressure of the hot salt solution. They are well known to be very sensitive. Being that the patient is not under an anesthetic the reflexes are not depressed by it. Now the irritation of the splanchnic nerves and sympathetic ganglia produced by the heat and pressure at once cause contraction of the intestinal arteries, veins and portal vein, and thus a marked rise in blood pressure. Really a shock is produced by the sudden pressure of this hot solution on this great and important part of the vasomotor nerve mechanism, but this shock is a sudden reversal of the phenomena of surgical shock. The radial pulse returns or its pressure is markedly increased. The glass tube is taken out quickly; a small piece of gauze laid over the wound, and a strip of adhesive plaster applied, then a tight abdominal binder to sustain the pressure. If this treatment should not succeed, I strongly advise repeating it in one or two hours. In addition to the above treatment I advise hot salt solution per rectum ten ounces every two hours principally on account of getting the heat near the hypogastric plexus and splanchnic nerves, also full glasses of hot water to drink for similar purposes; otherwise do not disturb the patient with hypodermics or even raising the foot of the bed—just keep her warm and as comfortable and peaceful as possible.

During the last two years before I conceived this treatment of abdominal surgical shock I had no faith in any of the drug treatment unless, perhaps, atropine for the profuse sweating. I had faith only in salt solution under the breast or per rectum by the drop method, or filling the abdomen at the end of abdominal operations and heat to the external surface of the body, together with physiological rest, *i.e.*, mental and physical repose.

I wish to state some more physiology to show you that this treatment is more nearly directed at the real cause of surgical shock than the ordinary methods of giving salt solution which I had most faith in heretofore. It is generally accepted knowledge, that by virtue of the amazing power of accommodation possessed

by the vascular system as controlled by the vasomotor and cardiac nerves, the total quantity of blood may be greatly diminished or greatly increased without endangering life, or even causing more than a transient alteration in the arterial pressure. It is not until at least a quarter of the blood has been withdrawn that there is any notable effect on the pressure, for the loss is quickly compensated by a constriction of the smaller arteries, and the activity of the heart. An animal may recover after losing considerably more than half its blood. Conversely, the volume of the circulating liquid may be doubled by the injection of blood or normal salt solution without causing death, and increased by fifty per cent. without any marked increase in the pressure. This excess is promptly stowed away in the dilated vessels, especially those of the splanchnic area; the water passes rapidly into the lymph, and is then more gradually eliminated by the kidneys. These known facts when considered show plainly, I believe, that the putting of more liquid into the circulation as normal salt solution by any of the customary routes is not aimed at the real cause of shock. It is of little value as compared with the heat or heat and pressure stimulation of the splanchnic nerves, which produces constriction of the abdominal arteries, veins and portal vein. Also it is to be remembered that the heat applied to these abdominal sympathetic nerve structures on account of the part they play in the regulation of the body temperature produce a dilatation of the peripheral vessels thus relieving the resistance to the heart, and also making the heart beat faster and stronger to get the blood or heat to the surface. If it were not for the heat given off, the body would be heated to the boiling point in thirty-six hours.

I will now give you the history of the case on which I finally used this treatment after I had almost abandoned hope.

Mrs. W., age 53, entered St. Anthony's Hospital November 29th, operation abdominal hysteromyomectomy, Dec. 1st, 1908. Tumor measured $6\frac{1}{2}$ by $8\frac{1}{2}$ by 7 inches. Took chloroform well. Operation lasted forty minutes. Sigmoid flexure was adherent to tumor to the extent of four or five inches. Tumor was well supplied with enlarged veins and arteries, however, she lost very little blood through the operation. Raw surfaces were all covered with peritoneum. Intestines were not allowed out of abdominal cavity, and were kept covered with hot salt solution pads. Patient was in good condition during all the time of the operation, and was put to bed in the same condition at 11 a.m. with pulse eighty full and normal strength. About twenty minutes later when she

began to become conscious she received a hypodermic of morphine $\frac{1}{4}$ grain and atropine 1-150 grain. She rested quietly with good pulse, warm extremities, very little nausea, and not much pain until 3.45 p.m., when the nurse noticed the pulse getting weaker, at 4 p.m., pulse 100 and very weak. When I arrived at 5 p.m. pulse was 116 and very weak. Patient was bathed in cold perspiration, temperature 97. This patient had had none of the ordinary causes of shock as loss of blood, prolonged operation, handling or exposure of intestines, but she had a large uterine fibroid removed causing more or less negative pressure in the abdominal cavity, and she had been subject to nervous weak spells for years. I had been exceptionally particular about keeping the patient's legs warm after the operation, and ordered the morphine and atropine, at the same time remarking to the nurse that I thought it beneficial to prevent shock as well as making the patient more comfortable. But notwithstanding the warmth and morphine she passed into the condition of shock.

It was very difficult in this case to differentiate between shock and hemorrhage. The foot of the bed was elevated about sixteen inches. Eight ounces of hot black coffee was given by rectum every four hours, alternating it with eight ounces of salt solution, digitalin 1-100 grain was given hypodermically every four hours, extremities were kept as warm as possible. Some fear that it might have been due to hemorrhage deterred me from giving the salt solution intravenously or subcutaneously.

I had to leave the hospital at 8.30 p.m., at which time her pulse was more faint, scarcely perceptible, but rate 124, and respirations were more rapid and distressing. Patient felt very faint and asked for heart stimulants, she continued to fail and by midnight pulse could only occasionally be felt at the wrist. Dr. Treadway, the house surgeon, was called to see her at 2 a.m., and again at 4 a.m., and could not find any pulse in either wrist at either time. The nurses could not find any pulse at 6 or 7 a.m., and patient's face was blanched, and respirations were entirely costal and very distressing. Patient was vomiting some green bile. The nurses and house doctors were looking for her to die any time after midnight. I arrived at the hospital at 8 a.m., and found her merely alive, no pulse could be found at either wrist, and breathing was very difficult and rapid. Her face and lips were blanched. The foot of the bed was still on chairs, I had almost given up hope. I ordered a pint of normal salt solution subcutaneously under the breast, and at once took two silkworm gut sutures out of abdominal

wound, and with sharp pointed scissors and probe pried open the fascia and peritoneum, and could see the glistening omentum and intestines showing no hemorrhage or peritonitis. I at once, with sterilized glass tube of 1-3 inch diameter, inserted into the abdominal cavity to the distance of four or five inches up behind the omentum and transverse colon, allowed one pint of hot normal salt solution to run in rapidly (time about six seconds) she did not have much pain during the first few seconds of the time, but had a great deal during the last few seconds. Abdominal cavity now seemed full. The glass tube was removed quickly and no solution allowed to run out. A narrow strip of gauze and adhesive plaster was applied. I quickly felt the wrist and found a distinct regular pulse of full strength, but radial artery had only 1-3 normal calibre, after an absence of the radial pulse for seven or eight hours. This pulse did not disappear or weaken again, but the radial arteries gradually increased in calibre all day and at 5 p.m. were of normal size. The abdominal binder was kept tight all day. The salt solution under the breast was apparently not absorbed until after the pulse returned. The return of the pulse was instantaneous or must have been within one or two minutes of the shock and pressure of the hot solution run into the abdomen. Foot of bed was put down on the level, off the chairs, just before the salt solution was put under the breast, and the hot solution in the abdomen, showing that elevation of the foot of the bed was probably of little or no use.

Lawson Tait, in 1887 advanced the introduction of large quantities of sterile water into the peritoneal cavity before closing the abdomen while the patient was still under the anesthetic. This has been done since that time by many surgeons. Crile states that this method is equivalent to introducing saline solution by subcutaneous infusion. Crile also states that this is a good thing to do at the end of an abdominal operation that is attended by profound shock. But this putting salt solution into the abdominal cavity when the patient is under the anesthetic, the reflexes being depressed is an entirely different matter from the treatment I recommend. Nowhere can I find in the literature any suggestion or intimation of this treatment of abdominal surgical shock. Although I have as yet only tested it on one case, the reaction was so marked, so immediate and permanent and the best and latest knowledge of the physiology of the vasomotor nerve mechanism together with the clinical picture of the case I reported convince

me that this treatment is more rational than any yet advocated. But the surgeon must see that every detail of the treatment is carried out accurately and recovery not prevented by too many hypodermics.

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Medicine

GRAHAM CHAMBERS, R. J. DWYER, GOLDWIN HOWLAND, GEO. W. ROSS, WM. D. YOUNG.

The Value and Limitations of Salt-Free Diet and Restriction of Fluid in Nephritis. VICTOR C. VAUGHAN, *Jour. Am. Med. Ass'n*, Nov. 27, '09.

The inorganic salts of normal urine carry about 85 per cent. of the toxicity of this fluid, potassium chloride being the most toxic, while 15 per cent. is due to the organic constituents, and these probably partly neutralize each other. Urea and uric acid, so far as their toxicity is concerned, are not important—that is they are not important as neither is active in causing the symptoms resulting from failure in functioning. Neither are the inorganic constituents, especially potassium, to be set down as the cause of uremia. Dr. Vaughan is certain that in withholding salt from nephritics we do not withhold the direct cause of uremia. We simply, by the use of a salt-free diet, protect the kidneys by to a certain degree decreasing their labor. Poisoning due to retention of urine and uremia are two different and distinct things. The poison results in uremia from a radical change in metabolism; an active agent is produced; it is not one of the normal constituents of the urine. Widal in 1903 suggested that nephritic edema was due to chloride retention; that as edema disappeared chloride elimination increased; therefore, a diet largely salt-free was the proper treatment of the edema of nephritis—probably good reasoning, but not always borne out by the experience of clinicians. Hence it was suggested that the milk diet owed its success to the small amount of sodium chloride it contained. In acute nephritis edema is due to the effect of poisons on the walls of the vessels; in many cases of chronic, to circulatory disturbances and so best treated; in amyloid, toxic; in a small number of chronic parenchymatous it is markedly influenced by the quantity of salt in the food; in these the best results follow from the salt-free diet. Dr. Vaughan considers that the best good is accomplished in restricting salt in the pre-nephritics, men and women past the prime of life, unduly energetic, often of good habits, but overworked; heart unduly taxed; blood pressure high; getting out of breath easily; occasionally dizzy; probably a

trace of albumin. To these the salt-free diet would be advantageous. In any form of nephritis he has never seen any benefit in denying the patient the satisfaction of his thirst with water; and it seems to him to limit fluid in nephritis so far as possible without distress to the patient. G. E.

The Position and Work of the American Pediatric Society Toward Public Questions. By THOMAS MORGAN ROTCH, *Archives of Pediatrics*, October, 1909.

The child labor question, which, as is well known, is particularly bad in the Southern States, may be set down as the object Dr. Rotch had in view when presenting this paper to the American Pediatric Association, as well as the position the Association should assume on public questions in general. That a Pediatric Society composed of physicians who have an undoubted general knowledge of children in safeguarding early life should, as Dr. Rotch affirms, take an active part in all movements which will tend to ameliorate the undoubted wrongs of the young people of any country, all will certainly agree. There is now a child labor bureau as a part of the Department of the Interior of the United States Government; and many women have interested themselves in the child labor movement. Dr. Rotch believes it to be the duty of physicians to counsel and guide in this movement. A movement is now on foot to increase the age in years before a child shall be employed, especially in the cotton mills; and Dr. Rotch considers it would be unwise to pass a universal law, owing to the difference in development of children in different races and families and in different parts of the country. In South Carolina the age limit is now ten years, and it is proposed to make universal fourteen years as the age limit. It is easy to see that boys of 13 to 14 are thus thrown on the streets and become loafers, where they are well fitted to earn their livelihood by light employment. As he wisely points out, matters of this character cannot be regulated by years, consequently rules for regulating will be elusive and wrong. Physicians should study the force-outcome for different employment, and with a physical developmental index, laws for age limits may be dismissed. Dr. Rotch believes that a radical reform is needed in organization, especially in kindergartens and schools, which reform should be based on an anatomic index; and that it is not for the educators to know what is best in this respect, but the physician. A society of this character should act in an advisory capacity on the question of the work of safeguarding early life and, if necessary, oppose educators and child labor committees where they are known by pediatricists to be

pursuing the wrong course. There is apparent great need for educators, philanthropists, lawyers and pediatricians getting together on these questions.

G. E.

The Treatment of Pulmonary Tuberculosis Based on the Assumption that the Dietetic Cause of the Disease is Lime Starvation. JOHN F. RUSSELL, *Medical Record*.

As lime forms about three-quarters of the total mineral solids of the body, it has been a subject of speculation whether a deficiency might be the cause of disease. Milk first, eggs next contain the greatest amounts of lime salts, and these two foods largely predominate in the modern treatment of tuberculosis.

Speculating in the summer of 1906 on the manner of absorption of lime in milk, Russell in his New York dispensary practice considered that if the gastric secretion lacked rennet, combination of lime and casein would not be absorbed in a form suitable for tissue nutrition. He first experimented and worked out two hypothetical considerations, viz., first, that lime starvation may be the dietetic cause of tuberculosis; second, that the action of rennet in the stomach is necessary in the preparation of lime for absorption. The tuberculous patients he separated into two classes: (1) those whose disease is the result of a sufficient supply of proper food; and (2) those whose disease is the result of a deficient production of rennet. Beginning with rennet clotted milk, then this and dilute hydrochloric acid, he subsequently adopted about July the milk-egg-hydrochloric mixture, to which now he wholly pins his faith. The milk-egg-acid mixture he has prepared in this way: Two eggs are beaten, strained and mixed with sufficient milk to make one quart. To each quart of this mixture four drachms of dilute hydrochloric acid are added and stirred until thoroughly mixed. The mixture is then bottled and put in the ice chest. Experiments over some time established the above amount of acid. Patients drink one pint at the morning hour and one pint at the evening hour in divided glasses. The patients took this at the dispensary and at home other raw eggs immediately after food. From the first employment of the rennet-clotted milk up to November, 1909, 22 are apparently cured or 46.80 per cent. of the whole number treated; and 25 or 53.20 per cent. are still under treatment. From the re-examination of 12 patients two years or more after apparent cure only two show presence of tubercle in their sputum. In all but these two the general health is put down as "good," in these two "fair." No patient was admitted for treatment whose sputum did not show tubercle bacilli.

G. E.

Surgery

WALTER MCKEOWN, HERBERT A. BRUCE, W. J. O. MALLOCH,
WALLACE A. SCOTT, GEORGE EWART WILSON.

A Disease of the Gall Bladder Requiring Cholecystectomy.

B. G. A. MOYNIHAN, M.S., F.R.C.S., of Leeds, Eng., Surgeon
to the Leeds Infirmary. *Annals of Surgery*, Dec., 1909.

This abstract of Mr. Moynihan's paper is taken from the December, 1909, number of *Annals of Surgery*—Jubilee Number. We wish to extend to the editors of *Annals of Surgery* our most hearty and sincere congratulations on their magnificent "Jubilee Number," which marks the completion of the fiftieth volume of this most excellent journal. We know of no single journalistic issue which contains such a brilliant and extensive array of original papers dealing with purely surgical subjects. To glance over its Table of Contents, with 23 different papers, by a varied and distinguished list of authors, and to read the appreciative "Beginnings of the *Annals of Surgery*," by Roswell Park, is to be deeply impressed with the splendid development of the "*Annals*" through the past few years, and with the most important place it holds in the realms of surgical literature to-day. Again, congratulations, and all good wishes for the future.

Mr. Moynihan expresses the opinion that doubtless many surgeons have operated on patients supposed to be suffering from gall-stones, when an examination of the gall-bladder and the ducts has revealed the existence of no calculus. The incorrectness of the diagnosis has often been explained by the doubtful existence of chronic pancreatitis, or by the presence of a thick,ropy, "tarry" bile, which has been thought to escape down the ducts with as much difficulty as a solid concretion. Such cases were seldom permanently relieved by cholecystotomy.

During the past two years he has come across a series of cases revealing a condition of which he was previously unaware, and one which he thinks will explain the condition of "cholecystitis without gall-stones."

Briefly, the history of such cases is one in which there has been a period of "indigestion," lasting for months, sometimes for years. There have been discomfort, a sense of weight, fulness or distention after meals, and heartburn or acidity, and in consequence the diet

may have been much restricted. At intervals, "attacks" of pain occur, attacks which are usually severe, sometimes agonizing, and may be attended by shivering. The pain in all its attributes is exactly that described as "hepatic colic," and a faint tinge of jaundice may follow. After an attack the gall-bladder may be palpable, and for some days a sense of soreness and of stiffness may be felt in the side. On such evidence as this a confident and most reasonable diagnosis of gall-stones may be made. When the abdomen is opened, the gall-bladder may appear to be quite healthy. In one of his cases, the gall-bladder was absolutely normal in appearance; it had the blueness of health, and the gland by the side of the cystic duct was not enlarged. In this case, as in all, the bile was found to flow with difficulty when a needle was thrust into the gall-bladder. The bile is thick, dark in color, tenacious, and often sticky. As it flows on to a swab, the sparkle of cholestrine crystals may be seen. It is at this point that the mistake may be made of completing the operation by inserting a tube into the gall-bladder and in being content with drainage. If now the interior of the gall-bladder be inspected, a curious appearance is presented.

The whole of the mucosa is thickly dusted with fine stones; the stones are numberless, of small size, and they fit snugly into the pits on the reticulated surface of the mucous membrane. The fine calculi are indeed embedded in the wall; they cannot be brushed away, and scraping the surface with a spoon or with dry gauze does nothing to move them. When the whole interior is displayed, it is seen that the number and size of the fine stones increases as the cystic duct is approached; at the beginning of the duct they stop abruptly in a perfectly straight line. The mucosa of the duct itself is usually intact, smooth and free from all trace of grit. The wall of the gall-bladder itself may appear normal, or it may be thickened at the fundus and normal elsewhere, or it may be white and slightly thickened, or finally it may be dense, thick, opaque, with a cavity much reduced in size. Every grade of cholecystitis—from the mildest to the very severe—has been met with. The most common condition is to find the gall-bladder almost normal, retaining much of its natural blue color, and all of its smoothness and suppleness. These are the cases it is most essential to recognize, for in them also the removal of the gall-bladder is the only course of treatment likely to be attended by lasting success.

In two of his cases there was well-marked chronic pancreatitis, excited, doubtless, by the repeated irritation of infected bile.

He draws the following conclusions:

1. There is a condition of the gall-bladder in which fine grains of calculus material are embedded in the mucosa; the cystic duct is not affected.
2. The wall of the gall-bladder may appear normal. It may retain the blue color of health, and the walls are thin and supple. It may be white and thickened, slightly or grossly, in part or in whole.
3. No stones are free in the gall-bladder, though particles of grit may be found in the bile therein.
4. Chronic pancreatitis may be present in the more advanced cases.
5. Inspection of the mucosa of the gall-bladder is necessary to reveal the presence of this condition in its early stages; it cannot otherwise be recognized.
6. Removal of the gall-bladder is necessary; drainage of the common duct may be desirable in cases where jaundice has been present.

He cites three cases, giving the history of each in detail, which we need not repeat here. Suffice it to say they corroborate fully all he has said on the subject. The paper shows three fine illustrations, in color, of the removed gall-bladder of each case, already referred to. The illustrations show the interior of each gall-bladder studded with fine grains of cholesterin stones.

We feel that, in this paper, Mr. Moynihan has made a most valuable contribution to the subject of gall-bladder surgery, and one which would well repay any of our readers to go over the original paper, with its interesting case histories. Personally, we recall a few cases which came under our own observation, where, a diagnosis of gall-stones having been made, the gall-bladder was tapped of a considerable quantity of thick, tarry bile, which was drained away with some difficulty, subsequent palpation of the gall-bladder giving no sign of stone. These cases were all drained, and in at least one of them the result was not satisfactory. In the light of this paper of Mr. Moynihan's, it will be interesting to note the comparative frequency of this condition with that of true gall-stone, in the future.

T. B. R.

Psychiatry

W. C. HERRIMAN, ERNEST JONES.

Treatment of Locomotor Ataxia by a Modification of the Re-educational Exercises. FRUCHTBANDLER. *New York Med. Journ.*, Oct. 2, 1909. P. 635.

The extremely valuable results obtained by Frenkel in his re-education treatment of the ataxia of tabes need a complicated apparatus. Fruchtbandler has simplified the treatment so that it can be applied by the general practitioner. He here gives a detailed description of the exercises he employs. The indications he mentions for stopping treatment during a seance are important.

E. J.

A Study of the Traumatic Insanities A. C. BRUSH. *Journ. of the Amer. Med. Assoc.*, Oct. 2, 1909. P. 1081.

The writer holds that three psychoses may be produced by trauma: (1) traumatic hypochondria, (2) acute primary traumatic insanity, and (3) organic dementia. In the latter two organic changes are present, due to minute lacerations, hemorrhages, etc.

E. J.

Some New Fields and Methods in Psychology. FREDERICK PETERSON. *Med. Rec.*, Nov. 13, 1909.

This is a short and popular account of some of Freud's and Jung's recent discoveries. Peterson first descants on how much the medical practitioner loses by ignoring the study of morbid psychology, which is of inestimable value in connection with both the understanding and treatment of so many disorders. He points out how important is the sub-conscious buried mental life in both the normal and abnormal. The word-association test, as used by Jung, now enables us objectively to verify the presence and activity of various sub-conscious emotional "complexes." Freud's psycho-analytic method makes it possible to reach and deal with these complexes, which are at the root of psycho-neurotic symptoms. He mentions the interesting resemblances between the structure of dreams and insanity. Dreams are intervals of insanity, from which one wakes up. However bizarre, incoherent and chaotic they may

appear on the surface, they are always the distorted presentation of perfectly logical and highly significant mental processes that are unknown to the subject. By Freud's technique, it is now possible to interpret them, and thus reach the most hidden wishes of the subject. Dream interpretation is the most important part of psychotherapy.

E. J.

A Statistical Study of Alcoholism as a Causative Factor in Insanity. C. R. MCKINNISS. *Medical Rec.*, Nov. 27, 1909.

After mentioning some previous statistics on this matter, the writer shortly gives his own experience. He states that, of 520 male patients, alcohol was an important etiological factor in 46 per cent.; 13.5 per cent. of all the cases were classed as alcoholic psychoses. In 41 per cent. of the imbeciles and 34.5 per cent. of the epileptics, alcohol was responsible for commitment. Like so many other writers, McKinniss does not distinguish between the finding history of alcohol and the determining of how far this was actually operative; the figures are therefore of comparatively little interest.

E. J.

Reviews

The Annals of Surgery completes its fiftieth volume.

The December number of the *Annals of Surgery* (Philadelphia), which completes the fiftieth volume of that journal, is worthy of more than passing notice. It is a jubilee number, and, by its size and the character of its contents, fitly marks so important an event in its history. The cosmopolitan character of the journal is seen from the list of contributors, which comprises the leaders in surgery of England, Scotland, Denmark, France, Italy, Hawaii, Canada and the United States.

Twenty-two articles form a number of more than four hundred pages. The illustrations, some of which are colored, are profuse, making a volume which merits the term of a jubilee number. Such an event in the history of any medical journal is worthy of note.

American System of Surgery. Bryant and Buck. Vol. II. New York: Wm. Wood & Co.

This volume contains a vast amount of information upon various subjects. There is a well-written article on plague, leprosy, actinomycosis, anthrax, madura foot, etc. Tuberculosis and syphilis are dealt with in a general way. A further section deals with a miscellaneous group, including ulceration, abscess, skin diseases, surgery of nerves, tendons and glands. Burns and frost bites take up another section, while the last part treats of wounds by various instruments, including gunshot wounds.

On the whole the volume is well written and the knowledge imparted is trustworthy. Occasionally one meets with some overlapping, but this is to be expected in a work of this nature. One writer advocates excision for keloid, while another points out that operation is useless owing to the extreme likelihood of its return, an objection which we think holds good.

The article on gangrene is especially good, and in our opinion is equal to anything extant. The chapter on the Surgery of Nerves is, however, disappointing. The writer, we believe, advocates certain procedures and holds views that are to-day untenable and not in accord with the greatest authorities. For example, turning down a flap from the proximal end of a divided nerve to bridge a gap, or in adopting a similar procedure in case of a bulbous extremity instead of excising the whole. He takes sides with Balance in

believing that nerve regeneration is peripheral in origin and not central, as held by most physiologists. Then he fails to tell his readers the difference between a complete and incomplete division of a nerve—the treatment being as widely separated as the seas—and hence no prognosis can be arrived at.

The paragraph dealing with the median nerve opens with the following sentence: In paralysis of the median the thumb and little finger cannot be brought against each other. This statement is common enough in text-books, but is not accurate. If the median were divided high up before the branches to the flexors came off it would hold, but the nerve is usually divided just above the wrist, and in such cases the thumb and little finger can be approximated. The fallacy lies in the belief that such movement is brought about by the abductor pollicis, which is supplied by the outer branch of the median, whereas it is the flexor longus pollicis which is the cause of the movement. The only movement the individual with a divided median cannot perform is to raise the thumb at right angles to the outstretched index finger, a motion which is produced by the abductor pollicis. It is for this reason that a divided median nerve is so often overlooked when the writer attempts to deal with the anatomy of certain nerves he gets hopelessly muddled. We do not look for anatomists among surgeons, still the latter cannot afford to play fast and loose with anatomy when committing their thoughts to paper.

G. E. W.

Webster's New International Dictionary. Editor-in-Chief, Dr. W. T. HARRIS, late U. S. Commissioner of Education, Springfield, Mass., U.S.A.: G. & C. Merriam Co.

The new Webster's International Dictionary is a magnificent specimen of the lexicographer's art. It contains over 400,000 defined words and phrases, so arranged in divided pages that the less familiar words are classified at the foot of each page by themselves. The volume embraces 2,700 pages, and being just issued and new from cover to cover, presents essentially a new dictionary of the English language. There are 6,000 illustrations, which in their selection and execution display accuracy as well as utility. Over 100 years ago Noah Webster began work on an American Dictionary of the English language. In 1828 he had published the first edition in two quarto volumes. The vocabulary contained 70,000 words. The second edition was issued in 1840, and since 1843 up to the present time, under the management of a single publishing house, **it** has gone on steadily and consistently developing until to-day it stands pre-eminent in its own particular field, a wonderful and mighty monument both to editors and publishers alike. From

70,000 words to 400,000 words and phrases in 70 years is a stupendous stride, and one can form but a little conception of the immense amount of work the editors have had to perform in arranging this new work and taking as their guide the 175,000-word edition of 1900 (the last), even although one is told it took six years to bring this new work to its present condition of magnitude and perfection. To any teacher, professor, professional man, business man, manufacturer, educationist or student the work will far more than repay for the very reasonable outlay of \$12.00 its purchase. No educational institution, and certainly no editorial office of whatever description can afford to be without this exact and comprehensive production of the Merriams.

Public Health (Catechism Series). Second Edition. Revised by W. ROBERTSON, M.D., D.P.H., Medical Officer of Health, Leith. Price per part 1s. net; 4s. 6d. for the five parts. Edinburgh: E. & S. Livingstone.

This Catechism Series on Public Health is issued in five paper-covered parts, averaging between forty and fifty pages each. Part I. treats of questions with regard to Water and the answers thereto; II., Air and Ventilation, Warming, Lighting and Climate; III., Sewage and Its Treatment; IV., Vital Statistics, Dwellings, Meteorology; V., Epidemiology, Food, Burial, Water Closets, Disinfectants, Heating, Hospitals. The student of public health will appreciate this handy, educative series, and the general practitioner will find it of service in case of a rapid review.

The Smiths of Valley View. Being Further Adventures of the Smiths of Surbiton. By KEBLE HOWARD. London, New York, Toronto and Melbourne: Cassell & Co., Limited.

This is a rather racy sketch of country life in England, interspersed now and again with a visit to some near-by watering place. There are several humorous incidents, and it is quite a matter-of-fact narration. Interest in the doings and happenings of the Smith family is well sustained throughout.

The Shoulder-Knot. By MRS. HENRY DUDENEY. London, New York, Toronto and Melbourne: Cassell & Co., Limited.

A novel of a slight psychological turn; ordinary setting; disjointed dialogue, being more interesting in the latter than the former half. The plot seems to be a trifle weak.

The Romance of Michael Trevail. By JOSEPH HOCKING. London, New York, Toronto and Melbourne: Cassell & Co., Limited.

In this well-written and absorbing life of a young Methodist minister in Cornwall we have a story which holds the attention from start to finish. Probably the marriage scene is a little far-fetched, but the reader is not sorry at the denouement. There is a touch of Hardy in the well-handled plot.

Fifth Annual Report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis. Edited by JOSEPH WALSH, A.M., M.D. Published by the Henry Phipps Institute, Philadelphia.

Nearly 90 pages are devoted to a clinical and sociological report; an exhaustive study of the bone-marrow of cases dying of pulmonary tuberculosis, including detailed histories of 57 cases; the opsonic index in pulmonary tuberculosis; including a comprehensive pathologic report for the year ending Feb. 1, 1908, makes this a valuable annual contribution to the widely-interesting subject of tuberculosis.

The Morphia Habit, and its Voluntary Renunciation. By Oscar Jennings, M.D. London: Bailliere, Tindall & Cox. 1909. 7s 6d net.

The opening sentence of this book contains the astonishing statements that one medical man out of four is a drug habitué, usually a morphinist; that in some statistics 90 per cent. of morphinists are medical men, and that one-fifth of the mortality in the medical profession is caused by morphinism. We are in no position to criticize these figures, and can only repeat that we find them astonishing. In the later chapters, the author expounds his method of treatment, which consists essentially in the administration of Vichy water and Sparteine, at the same time that the drug is being gradually and voluntarily reduced. He rightly condemns sanatorium treatment, with forced deprivation, and above all, sudden deprivation. Unless full self-control is re-established, the cure is unsatisfactory. A good point made is that frequently a stage is reached when the patient is taking but little morphine, and considers himself now cured, in that he believes he can drop the small remaining quantity without further treatment. If this attitude is acquiesced in, relapse will surely occur, and all cases should be treated to the very end. Hypnotism is discarded.

The author's previous book is generally considered to be the

leading one in the English language. We do not wish to deny that, for there are very few books on the subject in English, but it is not to be necessarily inferred that this eulogy is of great value. In our opinion, this volume, though containing many useful points for the practitioner, is very superficial. No attempt is made to analyze the origin and pathological nature of the abnormal craving, although our knowledge of this subject is now, thanks to the fundamental work of Abraham and other German writers, far advanced. Not until we penetrate more deeply into the essential psychopathology of the condition do we obtain that insight into the nature of it which is necessary for the satisfactory and permanent treatment of it.

E. J.

The Physician's Visiting List (Lindsay & Blakiston's) for 1910. Fifty-ninth year of its publication. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut St. Price: \$1.00 net.

It would indeed be difficult to imagine a more complete and compact visiting list than this. When one recalls that this is the fifty-ninth year of its publication, it speaks volumes for its worth. The smallest size provides for 25 patients per week; larger sizes are to be had, suitable for 50, 75, or 100 patients per week.

Canadian Almanac.

This is the 63rd of the series, and so far as the medical profession goes, will be found of the utmost value in a general way. We believe the profession of medicine throughout Canada would welcome a list of medical practitioners of the Dominion, which might well be incorporated in the *Canadian Almanac*. It should be a valuable addition to the *C. A.*, especially if brought up to date each year, as there is no similar list that is or would be so readily available for physicians and those doing business with them.

G. E.

Clinical Examination of the Urine and Urinary Diagnosis. By J. BERGEN OGDEN, M.D., Medical Chemist to the Metropolitan Life Insurance Company, New York. Third edition, revised. Octavo of 427 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1909. Cloth, \$3.00 net. Canadian Agents: The J. F. Hartz Co., Ltd., Toronto.

In this very excellent work the author has divided the subject matter into two parts:

Part I., dealing with chemie and microscopic methods in detail, and

Part II., dealing more especially with diagnosis and differential diagnosis of disturbances and diseases of the kidneys and urinary passages, whether local or general, medical or surgical; and the peculiarities of the urine in certain general diseases of the body.

As the author says in the preface: "My chief object in presenting this work is to furnish the student and practitioner with a more complete clinical guide to urinary diagnosis than I have heretofore met with in a single volume"; and we think he has succeeded most admirably. At the close of the work will be found three appendices.—

- a. On examination of the urine for the purpose of life insurance.
 - b. On the method of recording urinary examinations.
 - c. Treating of reagents and apparatus for qualitative and quantitative analysis of urine.
- T. B. R.

A Text-Book of Obstetrics. By BARLOW COOKE HURST, M.D., Professor of Obstetrics in the University of Pennsylvania. Sixth edition, revised and enlarged, with 847 illustrations, 43 in colors. Price: Cloth, \$5.00. Philadelphia: W. B. Saunders & Co. Canadian Agents: J. F. Hartz Co., Toronto.

This edition of Doctor Hirst's text-book is replete with information and suggestions for the treatment of this important division of medicine.

The book is especially to be commended to the young practitioner, for the author gives very complete instructions for the treatment of the more serious conditions which may arise at any time, such as eclampsia and post-partum hemorrhage. A new feature of the work is the introduction of descriptions of the commoner operations of gynecologic surgery. Whether this is wise remains to be tested further. Altogether the work is a splendid example of a good, sensible text-book, conservative in method, and wise in its conclusions. I should certainly recommend it very highly to the young practitioner.

A. C. H.

Dominion Medical Monthly

And Ontario Medical Journal

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VOL. XXXIV.

TORONTO, JANUARY, 1910.

No. 1.

COMMENT FROM MONTH TO MONTH.

Milk and its Products.—Under this heading, the laboratory of the Inland Revenue Department, Ottawa, has sent out a circular, setting forth a scheme of proposed food standards, which are to be incorporated in the Food and Drugs Act. The following definitions are proposed:

1. *Milk* is the fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within two weeks before and one week after calving, and containing not less than eight and one-half (8.5) per cent. of solids not fat, and not less than three and one-quarter (3.25) per cent. of milk fat.

2. *Modified milk* is milk changed in its composition so as to have a definite and stated percentage of one or more of its constituents.

3. *Skim milk* is milk from which a part or all of the cream has been removed, and contains not less than nine and one-quarter (9.25) per cent. of milk solids.

4. *Pasteurized milk* is milk that has been maintained for twenty minutes at a temperature of 150 deg. F., or for thirty minutes at a temperature of 140 deg. F., and immediately thereafter refrigerated to at least 45 deg. F., and kept at that temperature until delivered to the consumer.

5. *Sterilized milk* is milk that has been heated at the temperature of boiling water, or higher, for a length of time sufficient to kill all organisms present. Sterilized milk shall not be sold, or offered for sale, except in hermetically closed containers, bearing the words, "This milk should be used within 12 hours after opening the bottle."

6. *Certified milk* is milk examined and guaranteed by any Local Board of Health or incorporated Society or Association of legally qualified medical practitioners:—

(a.) To be from cows semi-annually subjected to the tuberculin test, and found without reaction.

(b.) To contain not more than 10,000 bacteria per 1 cubic centimetre, on delivery to the consumer.

(c.) To be free from pus, blood, preservatives, or other foreign matters, and not to have been heated.

(d.) To meet the requirements of Section 1 above.

7. *Condensed milk* is milk from which a considerable portion of water has been evaporated, and contains not less than twenty-six (26) per cent. of milk solids, and not less than seven and one-quarter (7.25) per cent. of milk fat.

8. *Evaporated milk*, etc., is milk from which a considerable portion of water has been evaporated, and contains not less than twenty-six (26) per cent. of milk solids, and not less than seven (7) per cent. of milk fat.

Note.—Commercial usage appears in the main to be in harmony with the employment of terms as above defined.

Equivalent names are not interdicted so long as they do not violate the fundamental principle of truthfully describing the article. The use of the word "cream" as a name for evaporated milk is expressly forbidden. Sugar may be present in either Condensed or Evaporated milk, but ordinary usage restricts the name Evaporated milk to a product which contains no added sugar. The present U.S. standard requires 28 per cent. solids and 7.7 per cent. fat; but these requirements are not enforced since March 16, 1908, and have been claimed to be impracticable.

9. *Condensed skim milk* is skim milk from which a considerable portion of water has been evaporated.

10. *Buttermilk* is the product that remains when butter is removed from milk or cream in the process of churning.

11. *Goat's milk*, *ewe's milk*, etc., are the fresh, clean, lacteal secretions, free from colostrum, obtained by the complete milking of healthy animals other than cows, properly fed and kept, and conforming in name to the species of animals from which they are obtained.

That Alcohol is Exceedingly Dangerous to the Human Subject is borne out by the report of the experiences of the Henry Phipps Institute, of Philadelphia, as set out in the fifth annual report for 1908. In connection with the influence of alcohol on the tuberculous subject, this fact stands out prominently. Its influence is pernicious, and it is safe practice to abstain from it altogether.

It is a striking fact that, both as regards personal history and heredity, the number of patients applying for treatment at the Institute shows a decrease. During the second year of the work of the Institute, personal history of alcoholism was given in a percentage of 22.94, and 77.05 denied it; in the third year 24.05 per cent. and 75.94; in the fourth year, 24.86 and 75.13. During 1908, 15.87 per cent. and 84.12 per cent.

Those who admitted alcoholism in the preceding generation were in the second year 24.81 per cent.; not, 75.18; in the third year, 26.90 and 73.09; in the fourth, 27.78 and 72.21. During 1908 those admitting it were 17.43 per cent.; denying, 82.54. Of all the patients treated during the current year (1908), 75.90 per cent. denied its use both for themselves and their preceding progenitors.

Of those who admitted a personal history of alcoholism, the mortality was 100 per cent. higher than in those who denied it; whilst, as regards the preceding generation's habit, the mortality was 80 per cent. higher than in those who denied it. In non-alcoholics, the percentage of improvement was 30 greater; in the preceding generation, 10 greater.

The percentage of disease arrested shows greater in alcoholics than in non-alcoholics in two years, and the same was true of those who admitted alcoholism in the preceding generation, but the difference is not great. This is singular and peculiar enough to account for the once popular idea that alcohol exerted a beneficial influence in tuberculosis, but here, as elsewhere, the exception goes to prove the rule.

Tobacco and Tuberculosis.—The Henry Phipps Institute now has statistics for two years (1907 and 1908) upon the influence of the use of tobacco on the tuberculous. During 1907, 73.01 per cent. of the males used tobacco and 26.98 did not. In 1908, the percentages were 78.95 and 21.04, respectively. In the fourth year, 61.80 per cent. smoked only, while 8.38 per cent. chewed only, and 29.81 per cent. both chewed and smoked. In 1908 the percentages were 63.77, 7.18 and 29.04, respectively.

The mortality amongst those who used tobacco was greater, as was also the case in alcoholism. In 1907, 18.58 per cent. of those who used tobacco died; 5.15 per cent. mortality in those who did not use it in any form, while the percentages in 1908 were 15.30 and 13.51 respectively.

As regards the items, disease arrested, improved and unimproved, there was no appreciable difference amongst those who did not use tobacco.

This seems to show that tobacco, as was the case with alcohol, affords no protection against tuberculosis, and warrants total abstinence from both in this disease, especially when it is in an active form.

The Proposed Amendments to the Canada Medical Act, as the result of the special meeting of the Special Committee on Dominion Registration, of the Canadian Medical Association and representatives from the various provincial Medical Councils, in Montreal, on the 16th of November last, make no changes in the "Short Title" or "Interpretation" of the Act. In the section relating to the "Constitution of the Council," Clause (c) is eliminated, which reads as follows: "The determination and fixing of the qualifications and conditions necessary for registration, including the course of study to be pursued by students, the examinations to be undergone, and generally the requisites for registration."

In Section 7—Composition of the Council—(a) Three members (instead of one member from each Province) from all the Provinces shall be appointed by the Governor-in-Council.

(b) Proportion of elected members changed from first 100, or fraction thereof, one, to for first 500, or fraction thereof, one; and then for the next 1,000, or fraction thereof, one; for all over 1,000, one, and never more than three; and such members representing each Province shall be elected, under the regulations to be made in that behalf, by the Provincial Medical Council.

(d) Three is changed to one (either appointed by Governor-in-Council, or elected by the Homeopaths themselves).

Section 8 is changed to read: The term of office for members shall be four years.

Under Section 10—Meetings—eleven members are to constitute a quorum, instead of twenty-one.

Examinations.—This clause has been changed to read as follows: Section 11—Regulations—(g) The establishment, maintenance and effective conduct of examinations for ascertaining whether candidates possess the qualifications required, the number, times and

modes of such examinations; the appointment of examiners, and generally all matters incident to such examinations or necessary or expedient to effect the objects thereof.

The word "Canadian" is eliminated from the clause relating to reciprocity with British, colonial or foreign licensing bodies.

In Section 12, Clause (a), which reads as follows, is left out: "The requirements of any curriculum established by the Council shall not, at any time, be lower than the requirements of the most comprehensive curriculum then established for the like purpose in any Province."

The word "Canadian" is eliminated again from Section 18—Registration—in Clause 3, referring to reciprocity with Britain, etc.

The balance of the Act is unchanged. Appended are these suggestions:

(1) One of the three members of the Council named by the Governor-in-Council shall be a Homeopath.

(2) Any examination committee shall be composed of a majority of examiners speaking the language of the candidate.

(3) At any time any Province may retire from the Federal Pact, on a resolution of the Provincial Medical Board, passed on a two-thirds vote, and after three months' notice in the official Gazette.

From a perusal of the proceedings at the special meeting, held in Montreal in November last, we are led to the conclusion that some scheme of Dominion Registration is practically favored by all; that the Province of Quebec is unalterably and absolutely opposed to the Canada Medical Act, as at present constituted, but that that Province would favor inter-provincial reciprocity with all the Provinces, and even would favor Dominion Registration, as exemplified in the Canada Medical Act, if such were shorn of its objectionable features to them, namely, the so-called infringement of the provincial educational rights, as guaranteed to the Provinces under the British North America Act.

News Items

MONTREAL had 800 sudden and violent deaths in 1909.

DR. GEO. R. McDONAGH is down with an attack of pneumonia.

MONTREAL has an epidemic of typhoid fever, totalling over 2,000 cases.

DR. WALTER MCKEOWN, Toronto, has been spending a few weeks in New York.

HON. DR. J. J. E. GUERIN, Montreal, is a candidate in the mayoralty election of that city.

DR. JOHN L. DAVISON, Toronto, many will be glad to hear, is recovering nicely from an operation for appendicitis.

DR. W. A. RUPERT MITCHELL, ex-surgeon to the Shackleton expedition, has been visiting home friends in Toronto.

TORONTO had 7,839 births, 3,905 marriages, and 5,188 deaths in 1909. The births were 106 less, and the deaths 559 more than in 1908.

ST. JOHN, N.B., has ordered, through its Board of Health, compulsory disinfection of houses where patients have died of tuberculosis.

THE Ontario Medical Council, at its recent special meeting, caused the names of two members of College to be struck from the Register.

DR. S. W. PROWSE, Winnipeg, is returning shortly from Coronado Beach, Cal., where he has been recuperating his health after an attack of pneumonia.

ONLY one doctor was elected in the Toronto municipal elections, Dr. Bryans to the Board of Education. Who said doctors should take an active interest in politics?

IN Toronto in 1909 there were no deaths from smallpox; 77 from scarlet fever; 191 from diphtheria; 70 from measles; 30 from whooping cough; 79 from typhoid fever, and 293 from tuberculosis.

DR. H. C. WILSON, Edmonton, died recently in that city. The late Dr. Wilson was a pioneer physician of the Far West, was at one time Speaker of the North-West Assembly, and Mayor of Edmonton.

DR. E. P. LACHAPELLE, Montreal, is a candidate for the new Board of Control of that city. Dr. Lachapelle is Dean of the Medical Faculty of Laval University, and Chairman of the Quebec Board of Health.

DR. G. S. CLELAND, Toronto, died on the 3rd of January.

DR. L. F. BARKER, Baltimore, addressed the Academy of Medicine. Tuesday evening, the 4th of January.

THE Dr. G. A. Peters' Scholarship is to be established by the University of Toronto in October, 1910.

DR. BRUCE L. RIORDAN, Toronto, is building a fine residence at the corner of Yonge and East Roxborough. this city.

THE Aesculapian Club is a new organization of physicians in Toronto, which holds its first meeting on the 14th inst.

DR. UZZIEL OGDEN, for many years professor of gynecology in the University of Toronto, died at his home in this city on the 4th of January, aged 82 years.

DR. W. A. YOUNG, Toronto, Managing Editor of the *Canadian Journal of Medicine and Surgery*, and President of the American Medical Editors' Association, issued an encouraging Xmas and New Year's card, as follows:

"Smile awhile, and while you smile another smiles; and soon there's miles and miles of smiles, and Life's worth while because you smile."

MEDICAL LIBRARIES IN CANADA.—The New York Academy of Medicine during the past year collected by correspondence the number of bound volumes in the medical libraries of different countries, with the postoffice address and name of the librarian. This information was published in detail in the *Medical Record*, Sept. 25th, 1909, and from the reprint submitted it is seen that Queen's Medical Library, Kingston, has 1,500 volumes; McGill Medical Library, Montreal, 30,000; the Academy of Medicine, Toronto, 6,000; College of Physicians and Surgeons, of Manitoba, Winnipeg, 1,500.

THE Ontario Asylum Service has opened an out-patient department under the title of the Ontario Clinic for Nervous and Mental Diseases. Thanks to the Toronto General Hospital, the patients will be seen on Wednesday and Saturday mornings at nine in the building in Chestnut Street occupied by the Gynecological Service of the Hospital, and the staff will be glad to attend to any cases there that may be referred to them. The aim of the undertaking is to supply advice and help to the patients, with the application of various psycho-therapeutic measures of treatment. Besides early cases of the psychoses, such as dementia praecox, manie depressive insanity, etc., cases will also be accepted of such mental maladies as obsessions, etc., *folie de scrupule*, *folie de doute*, hysteria, phobias and anxiety neuroses. No cases of organic disease of the nervous system will be treated.

Publishers' Department

THE REMEDIAL VALUE OF IRON.—Amid all the doubt that modern skepticism and therapeutic nihilism have aroused in the professional mind, in regard to the medicinal or drug treatment of disease, we have yet to hear any question as to the distinct value of iron in anemic, chlorotic and generally devitalized conditions. This metal is, indeed, the physician's mainstay in such cases, and cannot successfully be omitted or replaced. There does exist, however, considerable difference of opinion as to the method of administering iron and as to the most generally eligible preparation of same. The tincture of the olden times, prepared from iron filings, has in these later days been superseded by the less irritant and more tolerable preparations introduced into modern pharmacy. Among such products none has seemed to be so generally acceptable and promptly assimilable as the organo-plastic form represented by Pepto-Mangan (Gude). The ferruginous element in this preparation exists as a true peptonate, in combination with organic manganese, iron's side-partner in reconstructive blood therapy. It is palatable, readily tolerable, quickly absorbable and assimilable and entirely free from irritant or constipating effect. Pepto-Mangan (Gude) rapidly restores vigor to the circulating fluid and because of its blandness and ready tolerability is especially valuable in pediatric practice.

TROPICAL MEDICINE.—The New York Post-Graduate Medical School is establishing in its new buildings a full equipment of wards and laboratories for the teaching of tropical medicine. The department is being conducted under the co-operation of the U. S. Army, Navy and Public Health Services, who detail officers from their respective Medical Corps to assist in the conduct of the laboratory and clinical courses.

THE Canadian Medical Exchange wishes us to say that this season of the year is probably the best of any for physicians desiring to sell their practices to offer them, as the Exchange has a great many more bona fide buyers registered with them, who are looking for a location, than they have practices to offer, and Dr. Hamill, who has conducted this important department of medical affairs for many years, would be glad to have the opportunity of opening up negotiations with physicians desiring to sell. The list

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of his offers will be found in the advertising columns of this journal, the complexion of which changes each month. The address is 75 Yonge Street, Toronto.

CONSTANTLY FAVORABLE RESULTS.—Dr. John Arthur Diggle, Med. Ref. Globe Accident Assur. Soc., of London, Eng., in writing of antikamnia tablets, says: "I may state at the outset that they satisfied me well, and the constantly recurring favorable reports prove that most who have given them a fair and thorough trial are quite satisfied with the results which have followed. They seem to be absolutely safe in exhibition, and to have no effect whatever on the healthy human organism. Such a safe analgesic and antipyretic is a perfect godsend in these days of "nerves" and all the resultant neuralgias developed under our civilization. In the cases in which I have used antikamnia tablets I have never noticed any ill-effects. As an analgesic, in my experience, the sooner the remedy is administered after the onset of pain, the quicker the relief, and the smaller the amount of the drug required; this would follow almost of course, but I think the oftener the dose is repeated in judiciously small doses, the better the result, as compared with larger doses less frequently given. Given in such doses, and at such intervals, I have found antikamnia tablets most useful in neuralgic cases and acute rheumatic attacks, and in sudden nervous attacks with severe pain. In case of paraplegia, in which the suffering from pain in the paralyzed limbs was agonizing, and had only yielded before to gradually increasing doses of morphine hypodermically, their effect was, and continued to be, good. In a case of typhlitis, both the analgesic and antipyretic properties were signally shown. In some cases of dysmenorrhœa, one or two tablets relieved the pain, and the after use of caulocœrea for a while, prevented its return. The rapidity with which they acted in some cases of migraine, seemed simply marvellous.

DOUBLE PNEUMONIA.—Mrs. E. D., aged 74 years, of New Durham, N.J., was taken ill in February, 1905. A local physician diagnosed the case as one of acute lobar pneumonia (both lungs), with grave complications. The third day found the patient much worse, and her attending physician and a consultant said there was no possible chance for recovery. At this critical moment, I was called in, after the other medical men were out of the case.

I found the patient unconscious, with marked consolidation of both lungs, stertorous breathing, temperature 105-3-5 deg., pulse 142 (feeble and irregular), respiration 35, and every indication



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of complete prostration. The previous treatment had consisted of an ordinary fever and cough mixture, French brandy at frequent intervals, and the local application of flaxseed to the chest. Little or no nourishment had been taken.

I suggested the immediate discontinuance of the flaxseed, which apparently had no effect, but was merely sapping the little vitality which remained.

My treatment was as follows: The immediate substitution of Antiphlogistine in place of flaxseed to the thorax, front, back and sides at intervals of eight to ten hours, and hypodermics of digitaline and whiskey at proper intervals.

The following morning found the patient slightly improved. fever 104 deg., respiration 28, pulse 132, and still unconscious. I was delighted however, to find that, ten hours afterwards, she had regained consciousness, and that the general symptoms were still further improved.

I then ordered nourishment in the form of milk, broths, etc., and the addition of aconite to the treatment. From that time on, the patient continued to improve daily, with no further aggravation of the symptoms, and at the expiration of two weeks she had quite recovered.

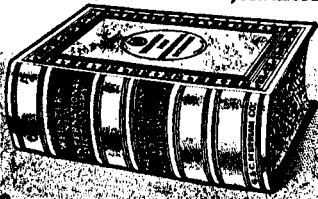
While I am willing to give the digitaline, whiskey, aconite and nourishment proper credit for their part of the work, I am thoroughly convinced, and do not believe I could be persuaded to the contrary, that the persistent and proper use of Antiphlogistine was responsible for the woman's recovery.—By H. S. Emerson, M.D., of Paterson, N.J.

WORD BLINDNESS.—It is scarcely open to question that all education should be individual, but unfortunately this requirement cannot be met in our crowded schools. The State is compelled to require a definite amount of knowledge from all engaged in the same course. The difficulties to which this may give rise are illustrated by the following stories of pupils, who, despite earnest endeavor could never learn to write correctly, or to read fluently, or to pass the examinations provided for the lowest classes, although some of them are able to accomplish important scientific work. A perfectly healthy fifteen-year-old girl, one of the best pupils of the highest class of a German school, could not spell correctly either German or foreign words, either from dictation or from memory. She could write single characters perfectly; she could also read a single series of musical notes, and play the violin by note, but she could not read piano music. The difficulty was that she was unable to impress the picture of a word on her memory. By the

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Alcoholism

About ten years ago strong influence, by each of two opposing interests, was brought to bear to induce the Ontario Government to adopt medical treatment for inebriates in the penal institutions of the province by the use of secret or proprietary remedies. The matter was referred to the Prisoners' Aid Association of Canada, and Dr. Rosebrugh was commissioned to visit in Canada and the United States, interview specialists, and report upon the most scientific method of treatment of inebriety. Upon his return he reported strongly against the employment of secret remedies, and the Government declined to grant the request referred to. Since then Dr. Rosebrugh has made the treatment of inebriates a special study, and his practice is limited to this speciality.

Correspondence welcomed.

ADDRESS—

A. M. ROSEBRUGH, M.D.
Secretary of Ontario Society for the Reformation of Inebriates

76 Prince Arthur Ave., Toronto, Ont.

employment of a great number of aids to memory, she succeeded in making much progress, but she continued to make the most incredible errors in writing, which sharply contrasted with the general excellence of her work at school. She could not read fluently, because the image of the word was not present to her memory.

The girl's grandmother, a highly-educated woman, her great-uncle, and a son of the latter exhibited the same defects. Each of the men wrote a number of scientific works, but the spelling had to be corrected by others.

In this case, therefore, this same defect, which the English call "word blindness," appeared in four members of one family. As we know that the brain contains a special centre for the memory of words, we must conclude that the entire absence of this elementary faculty in persons otherwise of good mental equipment, must be caused by a defect of this small part of the brain. As such persons cannot satisfy the requirements exacted in the lowest classes, they are in danger of never reaching the higher ones. In London, one case of word blindness was found among each two thousand school children. With proper appreciation of the conditions, it should be possible to carry on the education of such a child if otherwise intelligent. This, however, cannot be done by the school; it must be accomplished by the parents or by benevolent societies.—Umschau.

THE RADIUM INSTITUTE of America was formed at a meeting in the building of the New York Yacht Club recently. The purpose is to study radium, discover any radioferous deposits in the United States, and buy quantities of it in Europe for clinical use in the United States. It is the idea of the founders to establish a clinic in connection with some New York hospital, where radium treatment will be administered free to those needing it. The institute will take steps to protect the public from the false claims of patent medicine manufacturers, that certain of their remedies contain radium, and will set a standard that those desiring to deal in radium commercially will have to live up to. Dr. Charles F. Chandler was elected president; Dr. Robert Abbe, vice-president; Prof. William Hallock, secretary; Prof. George B. Bertram, assistant secretary, and Dr. Hugo Lieber, treasurer.—*Sc. Amer.*

MR. W. J. GAGE, Toronto, offers five scholarships in medicine to the University of Toronto, to the value of \$100.00 each, and gold and silver medals. These are to be given to fourth and fifth year students most proficient in diagnosing and treating tuberculosis.