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The Collegiate Courses of this School are a Winter Session, extending from the 1st of October to the end of March, and a Summer Session from the end of the first week in April to the end of the first week in July to be taken after the third Winter Session.

The sixty-first session will commence on the 3rd of October, and will be continued until the end of the following March; this will be followed by a Summer Session, commencing about the middle of April and ending the first week in July.

Founded in 1824, and organized as a Faculty of McGill University in 1829, this School has enjoyed, in an unusual degree, the confidence of the profession throughout Canada and the neighbouring States.

One of the distinctive features in the teaching of this School, and the one to which its prosperity is largely due, is the prominence given to Clinical Instruction. Based on the Edinburgh model, it is chiefly Bed-side, and the student personally investigates the cases under the supervision of special Professors of Clinical Medicine and Surgery.

The Primary subjects are now all taught practically as well as theoretically. For the department of Anatomy, besides a commodious and well-lighted dissecting room, there is a special anatomical museum and a bone-room. The other branches are also provided with large laboratories for practical courses. There is a Physiological Laboratory, well-stocked with modern apparatus; a Histological Laboratory, supplied with thirty-five microscopes; a Pharmacological Laboratory; a large Chemical Laboratory, capable of accommodating 76 students at work at a time.

Besides these, there is a Pathological Laboratory, well adapted for its special work. It is a separate building of three stories, the upper one being one large laboratory for students 48 by 40 feet. The first flat contains the research laboratory, lecture room, and the Professor's private laboratory, the ground floor being used for the Curator and for keeping animals.

Recently extensive additions were made to the building and the old one remodelled; so that besides the Laboratories, there are two large lecture-rooms capable of seating 300 students each; also a demonstrating room for a smaller number. There is also a Library of over 15,000 volumes, a museum, as well as reading-rooms for the students.

In the recent improvements that were made, the comfort of the students was also kept in view.

MATRICULATION.—Students from Ontario and Quebec are advised to pass the Matriculation Examination of the Medical Councils of their respective Provinces before entering upon their studies. Students from the United States and Maritime Provinces, unless they can produce a certificate of having passed a recognized Matriculation Examination, must present themselves for the Examination of the University on the first Friday of October or the last Friday of March.

HOSPITALS.—The Montreal General Hospital has an average number of 150 patients in the wards, the majority of whom are affected with diseases of an acute character. The shipping and the large manufactories contribute a great many examples of accidents and surgical cases. In the Out-door Department there is a daily attendance of between 75 and 100 patients, which affords excellent instruction in minor surgery, routine medical practice, venereal diseases, and the diseases of children. Clinical clerkships and dresserships can be obtained on application to the members of the Hospital staff. The Royal Victoria Hospital, with 250 beds, will be opened in September, 1893, and students will have free entrance into its wards.

REQUIREMENTS FOR DEGREE.—Every candidate must be 21 years of age, having studied medicine during four six months Winter Sessions, and one three months' Summer Session, one Session being at this School, and must pass the necessary examination.

For further information, or Annual Announcement, apply to **R. F. RUTTAN, M. D, Registrar,**
Medical Faculty, McGill College.

The Maritime Medical News.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY.

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Original Communications.

CASE OF CROSSED HEMIANALGESIA.

BY M. A. B. SMITH, M.D., Dartmouth, N. S.

(Read before Nova Scotia Branch British Medical Association.)

L. B., a lawyer aged 43 years. His family history is good. His father is living at the age of 82 years; his mother died aged 80 years. Three brothers are living and healthy; one died of typhoid. Three sisters, two healthy and one delicate, are living; one died in childhood.

The patient has always been temperate in his habits. There is no history of specific trouble. He has suffered from indigestion, but not within the last few years. He has always been fairly healthy, but not robust.

In appearance the patient is of medium size, thin, and has iron-gray hair with a tendency to baldness.

The patient, on the evening before his present illness was working late in his office. It was on the 5th of November. There was a fire burning, but the office door was open, and on his return home he complained of feeling chilly. He was feeling perfectly well, however, on Nov. 6th, the morning of the attack. It began suddenly while he was seated at breakfast. He was just finishing his meal and was about to take another cup of tea, when he experienced what he describes as a "shooting sensation" on the right side of his face, with great pain and numbness over that side of the face: he also felt dizziness. He immediately got onto a sofa. He remained there five minutes. He states he had no confusion of thought, though he does not appear to remember all that occurred as described by his attendant. He found on rising from the sofa to get to bed that it was very difficult for him to walk. He felt like a drunken man. He had a tendency to sink down on the effected side. He was helped up stairs to bed. He then felt a great oppression or difficulty in breathing over the lower and anterior part of the chest. He was coughing a dry cough. He states:—"I remember I had a good deal of difficulty in breathing." He felt very dizzy, as if things were whirling round. Just after he got to bed the nurse gave him a drink of hot ginger, which he vomited. While giving him this the nurse noticed he had a tendency to get across the bed with his head to the right side. He would say "Oh my! where am I?" While drinking the tea he found that he had difficulty in swallowing. This difficulty continued, with gradual improvement, for three or four weeks. The ginger tea was immediately vomited, and for a few hours vomiting was persistent. It occurred occasionally after this for two or three days.

I arrived two hours after the patient had gone to bed. At that time the pain in the right side of the face was still severe. There was also pain and numbness in the right shoulder, arm, hand and fingers. The sensation on the right side of the face was so altered that I could press the point of a needle into the skin for a considerable distance without the patient feeling any pain. The anaesthesia was most marked over the cheek bone and side of the nose. He was aware that something was touching him but could not say what. The muscle sense was impaired, the analgesia was almost as marked in the right arm and hand. There was no paralysis. The right eye was congested and the pupils were unequal; either the right pupil was contracted or the left dilated. Light was unpleasant to the patient and he would close the right eye or turn away from it. I prescribed a powder of calomel and soda which operated twice during the night following. Evening temperature 99⅕°.

Nov. 7th. Pulse 56, Temperature 98⅕°, Respirations 10, morning.

Nov. 9th. Pulse, 84, Temperature 98½°, Respirations 12.

Nov. 10th. Pulse 76, Temperature 99½°, Respirations 14, morning. The respirations continued 12 or 14, usually, for a month. About this time the patient began to complain of numbness in the left hand while the right was improving.

Two days later the numbness was manifest in the left leg and it was apparent that there was analgesia over all the left half of the body. The point of a needle thrust through the skin on this side gave no pain. The analgesia continued as marked as before on the right side of the face. The other symptoms continued the same as already indicated.

Nov. 22nd. The patient left his bed and was dressed for the first time to-day. He sat in the parlor for some hours. On attempting to walk across the room he staggered very much, toward the right side. The knee jerks were examined and found to be slightly exaggerated. There was still some photophobia.

Dec. 6th. Examination of the eyes by Dr. E. A. Kirkpatrick: "R. V. $\frac{20}{20}$, L. V. $\frac{20}{20}$. Emmetropia. *Left eye* perfectly normal. *Right eye*, slight ptosis of upper lid. Blood vessels in upper lid more prominent than those of the left upper lid. Nystagmus of a rotatory character especially when looking up and in. No actual paralysis of any of the oculo-motor muscles, but an evident weakness of all the muscles supplied by the third nerve. Instead, however, of a dilated pupil I find a slightly contracted pupil, but one that responds quite readily to light. *Accommodation* perfect. No hemianopia. No optic neuritis or any other disease of fundus. Slight photophobia. Strength of muscles not tested for."

At this time the anaesthesia on the right side of the face and the left side of the body still existed, though improvement was evident. The patient cannot distinguish a tumbler of hot water from one of cold on the left leg. He can walk about the room but with some uncertainty. Much exertion causes dizziness. The urine has a specific gravity of 1022 and contains sugar.

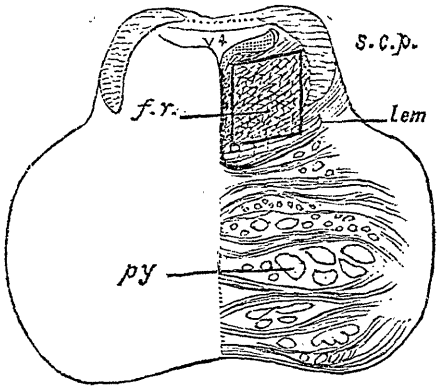
Jan. 6th. Examination with Dr. D. A. Campbell. The patient has a barely noticeable hesitancy in walking about his room. There are still areas of numbness on the left side. The patient says if he wishes to learn whether there is heat in the register he has to use his right hand. Dr. Campbell agrees with me that the heart appears to be healthy, and that there also appears to be a tendency towards atheroma of the arteries, though this is not certain.

I reported the above history to M. Allen Starr of New York, and received a full reply, in which he stated that the case had greatly interested him, and that in some particulars it resembled three cases reported by him.

The latter of the three to which he referred me, published in the *New York Medical Record*, Feb 11th, 1893, is very nearly identical. Dr. Starr went on to say:—"My diagnosis is:

1. Hemorrhage—from sudden onset—from evident symptoms, (1) of increased pressure viz: painful, slow and difficult respiration, glycosuria, vomiting; and (2) of irritation of the brain viz: forced posture, hypersensitiveness to light—and from gradual subsidence of local symptoms. I think embolism or thrombosis would not have caused all these symptoms of irritation and increased pressure, and the symptoms would not have subsided.

2. Location must be in the right side of the pons in its upper (cephalad) third, and in its dorsal superior portion. It involves the formatio reticularis and



Transverse section through upper part of pons. The anterior or ventral part below in the diagram. *V*. fourth ventricle; *s. c. p.* superior cerebellar peduncle; *r. r.* formatio reticularis: *lem*, lemniscus or fillet: *py.* pyramids motor. Square indicates lesion.

the fillet or lemniscus, as both tactile and muscle sense are affected and does not affect the pyramidal tracts as there is no paralysis. The forced position in bed—the staggering gait—now both show that the cerebellar peduncle which passes into the pons was invaded—at first pressed upon and irritated—later slightly impaired in function. The III nerve paresis shows that the lesion extended high enough to involve the III nerve nuclei controlling motion of eyeball, but not high enough to reach the pupil centre as the pupil is contracted—not dilated. It would be interesting to test the IV nerve, as this should be affected, as there is rotatory nystagmus. The lesion did not extend low enough down, i. e., caudad, to invade the VII nerve nucleus, as there is no facial paralysis. Hence it is easy to locate it accurately.

The glycosuria is due to increased intra-pontine pressure—not to X nerve lesion. The difficulty in swallowing is due to the same cause, unless a small part of the clot has penetrated down and reached the XI nerve nucleus—though this is unlikely as VII and VIII have escaped."

In the report of the case in the Medical Record of Feb. 1893, which, as I have said was similar to the above, though without any history of involvement of the third nerve, Dr. Starr estimated the size of the lesion as not greater than one-quarter of an inch in diameter. At that time he stated he had reached the followiug conclusions:

"1. If in any case anaesthesia of one side of the face occurs (not due to neuritis of the trigeminus or to cortical lesion) the lesion lies in the medulla or pons, in the outer third of the formatio reticularis. Its position in this part is to be determined by the other symptoms present; for if it is situated high up (cephalad) in the pons it will be on the side opposite the anæsthesia, and if it is situated low down (caudad) in the pons or in the medulla it will be on the same side as the anæsthesia.

2. If in any case anæsthesia of the limbs occurs (not due to cerebral lesion) the lesion lies in the medulla or pons, in the *inner* two-thirds of the formatio reticularis, and upon the side opposite to the anæsthesia; or in the spinal cord.

3. If one side of the face and the limbs of the opposite side are anæs-

thetic the lesion affects the entire lateral extent of formatio reticularis, and lies in the medulla or pons, below the point of union of the ascending and descending root of the fifth nerve.

4. If the face and limbs of the same side are anæsthetic, the lesion lies in the brain at a point higher than the junction of the ascending and descending roots of the fifth nerve in the pons."

One point in the present case appears to differ from the corresponding statement in these conclusions, for while the lesion is placed high up in the upper (cephalad) third of the pons it is stated to be on the *same* side as the anæsthesia of the face, namely the right side.

In explanation of the fact that the anæsthesia, which appeared in the right upper extremity at the commencement of the seizure, partly disappeared from this region in a few days, while at the end of the same period it was manifested on all the left side of the body and became permanent there, Dr. Starr says:—"Pontine hemorrhage always causes irregular early symptoms due to pressure and finally permanent symptoms due to destruction of tissue."

THE REACTION OF THE URINE.

By A. Halliday, M. D., Stewiacke.

Read before Nova Scotia Branch British Medical Association, March 21st, 1895.

Opinions of those who have studied this question are uniform as regards the reaction of the urine for 24 hours when mixed, but when we come to the reactions of the several different quantities going to make up the whole for the 24 hours there are few questions on which there seems to be greater diversity of opinion.

And yet this question is of considerable importance physiologically, and besides we find in the examination papers of all large insurance companies questions on this point and considering that the applicant may come to you before or after dinner, after great exertion or great inertia it seems to me that there is no great utility in merely stating that a urine is acid, neutral or even alkaline, thus in reality enunciating only one proposition of a syllogism from which it is impossible to draw a conclusion.

I will now give extracts from various authors showing the great differences of opinion and also the different explanations they give for the results, and then I will give some observations I have taken of my own urine and the urine of others and will point out where they agree and disagree.

The following occurs in Dujardin-Beaumetz's work on diseases of the kidney:

"Urine in the normal state is always acid and if it becomes neutral it is only as Fustier has shown before a meal.

Bence Jones has claimed that there exists a compensatory equilibrium between the acidity of the urine and that of the gastric juice. According to him the urine is at its minimum of acidity at the time when the stomach is at its maximum of acidity.

Roberts has maintained that the urine becomes alkaline 2 or 3 hours after a meal.

Byasson affirms that the urine is least acid after the first meal while the most acid urine is that of the night.

Neubauer and Vogel have adopted Byasson's view. Georges view also holds that the alkaline reaction appears 2 hours after the meal.

Delavand affirms on the contrary that the urine is acid during the entire day except in the morning when it is generally neutral or alkaline.

Finally Fustier who has made an important study of the reaction of urine has shown that urine is always more acid after meals and that its maximum acidity is about 4 hours after dinner; urine on the contrary is

always neutral or alkaline about 8 or 9 o'clock in the morning or before the ingestion of any food."

Tyson in his book says: " * * * * * * after a meal the urine may become neutral or even alkaline. The cause of this change in the reaction is still disputed. Roberts believes that it is due to a mixture with the blood of the elements of food which are largely alkaline and that the resulting increased alkalinity affects the action of the urine secreted.

Bence Jones contended that is is the demand made on the blood for the elements of the acid gastric juice which thus affects the reaction of the urine secreted during digestion.

While neither explanation is altogether satisfactory the former seems more likely to be correct."

The following is from Vierordt's Medical Diagnosis:

"But in the 24 hours the reaction varies considerably so as to be alkaline and yet physiological.

"The variations proceed in such a way that after every meal consisting of a mixed diet the acidity declines until after about 2 hours it becomes alkalescent, but this quickly passes so as to give place again to an acid reaction. These variations have been referred by many to the loss by the body of acids and alkalies in stomach and intestinal digestion. Hence it is assumed that the separation of HCl in the stomach increases the alkalescence of the blood and hence the urine becomes less acid or alkaline.

"But according to recent investigations by Noorden this increased alkalinity of the blood does not exist. By a graphic representation of the reaction of the urine during 24 hours we obtained the so-called "acid curve." This with some healthy persons and under like conditions (as to time and quality of food) is tolerably constant but with other healthy persons it varies considerably."

Purdy in his recent publication on the urine states as follows:

"Normal mixed urine is always acid. The acidity is due to acid sodium phosphate. . . . . The degree of acidity of the urine varies at different times of the day especially with regard to food. Soon after a meal the acidity begins to diminish and in from 3 to 4 hours the alkaline tide reaches its height. . . . . The urine is rendered alkaline by the administration of alkaline carbonates or the salts of vegetable acids also though to a less extent by the following circumstances.

(1) Soon after a full meal.

(2) After discharge of gastric juice in abnormal ways.

(3) After hot baths and free perspiration.

(4) Upon a vegetable diet."

More quotations of a similar nature might be given but they express more or less some one or other of the above views.

I will now proceed to give you the results of my own observations. During the first 2 days of observation I had not obtained all the necessary apparatus (burette) and consequently the results are more general.

The first day of observation I took ordinary diet and on the second exclusively milk diet. I kept a correct record of the articles of diet also the Sp. Gr. color &c. of the urine, but consider these either irrelevant or unnecessary to this particular part of the subject and so have not given them in the sheets which I will now pass round.

On December 16th, the first day observed I had owing to want of apparatus as before stated to judge of the degree of acidity by the eye, that is whether the litmus was more or less deeply stained.

Before breakfast the urine was acid, while an hour after breakfast it was still acid but less so. Two hours afterwards it was neutral and continued so till $3\frac{1}{2}$ hours after dinner

when it was slightly acid. From this onward it was acid during afternoon, evening and night.

December 17th, on milk diet the following results were observed :

Before breakfast very acid, one hour after also acid, ʒvii. requiring 20 m. KHO. for neutralisation, 2 hours afterwards also acid but in 3 hours neutral and continued so till 3 hours after dinner when it became slightly acid. The reaction continued the same during remainder of the day and night.

December 26. Before breakfast the urine was highly acid, but this greatly diminished within 1½ hours after breakfast. On this day my meals were very irregular owing to professional engagements. At 11 o'clock I had a cup of tea and bread, at 1.30 the urine was neutral. At 2 o'clock I had more tea and bread while at 3 the urine was acid 100 c. c. requiring 2 c. c. NaHO. sol. to neutralize. Notice about this that under the same existing circumstances as regards meals occupation (driving) the urine changed its character; i. e. was acid, became neutral and again acid. The acidity steadily increased during the remainder of the day. At 6 o'clock immediately before tea it was acid 100 c. c. urine requiring 5c.c. NaHO. sol. for neutralization while 2 hours after tea (which was the heaviest meal of that day and included meat &c.) 100 c. c. required, 18 c.c. NaHO. solution and 4 hours afterwards 100 c.c. required 28 c.c. NaHO. During night the acidity declined 100 c.c. only requiring 16 c.c. NaHO. solution for neutralization.

December 27. Urine before breakfast was exceedingly acid, 2 hours afterwards still very acid (100=20) but in another hour and 20 minutes this rapidly declined just before dinner 1¾ hours after dinner it was neutral while 4 hours after the acidity was again on the increase. Notice that while 3¾ hours after breakfast the acidity had greatly decreased, 4 hours (nearly the same time) the acidity was on the increase. This acidity increased up till the following morning.

December 28. Urine again very acid before breakfast and also 2 hours afterwards, 2¾ hours afterwards marked decrease, ¾ of hour after dinner neutral, but in 3¾ it was again increasing in acidity and in 4¾ hours markedly so, on this day it fell after tea but increased towards midnight although during the night it was only slightly so (100=6.6) less than at 12 o'clock.

December 29. Before breakfast very acid, 2½ hours afterwards still so, one hour after dinner slightly acid, 2 hours after almost neutral 100 c.c. requiring 0.5 c.c. NaHO. sol. Three hours after dinner acidity increased quite a little. This increase steadily kept going on till 11 o'clock. The urine during the night (1 a. m.) not nearly so acid (100 c.c=8 c.c. NaHO).

December 30. Sunday, on this day by abstaining from breakfast till a late hour, 12 o'clock, I tried to find how the reaction would be influenced by the change. At 9 a. m. urine was highly acid (100=24 NaH.O.) at 11.30 still before breakfast still more so (100=30) one hour after breakfast very acid while 3 hours afterwards it was neutral and continued so for 5 hours. After tea it became a little acid and at 12 o'clock was pretty acid 100 c.c. requiring 14 c.c. NaHO. solution. At 1 o'clock in morning it was very acid (100=32) and at 7 in the morning there was quite a decline of acidity which however obtained again before 9 o'clock (100 c.c=32 NaHO.)

December 31. Before breakfast very acid, slight decline towards mid day and a great decline in 1 hour, while 1 hour after dinner it again increased but 2 and 3 hours after dinner it was neutral. 2 hours after tea it was slightly acid, 4½ and 5½ after neutral, and in another hour and half (after tea and cake) it was acid; also

at 12 o'clock. At 3 a. m. the acidity was not so great as at 12 p. m.

January 1. Before breakfast very acid, 3¼ after less so and 1 hour after dinner still declining. 2 hours after dinner neutral and 4 hours afterwards acid which continued till 11 o'clock when it was very highly acid, except that at 2½ hours after tea it was a little less and it is to be noted that 10 o'clock, on ehour before great acidity I took milk &c. At 1 30 it was not quite so acid, before breakfast next morning it was still very acid.

The only other observations of my own urine in this connection were taken February 10th, from 8 o'clock evening till 3 a. m. every hour except 2 o'clock. This was taken in order to find out whether there was a period of maximum or minimum acidity during the night.

[See table.]

On reviewing those facts we see that there is considerable want of uniformity on the different days and for the same reason it is very difficult to draw hard and fast conclusions, one fact is pre-eminent and it is this that the urine is always at its maximum of acidity in the morning before breakfast and during part of the forenoon. And I think we may be permitted to say that generally there is a more or less gradual decline of acidity till the minimum is reached about an hour or so after dinner, when the urine is neutral. But in nearly all the cases towards 4 or 5 o'clock in the afternoon there is a gradual rise of acidity and with more or less slight variations to a maximum about midnight.

As will be seen more distinctly on Sunday December 30th, the first meal of the day is that which has most influence for in 3 hours the urine becomes neutral. Of course on the other days it usually reaches neutrality about 1 or 2 o'clock that is—after dinner but I am not so sure that dinner has a great effect because there is a gradual decline from breakfast onward and while there is neutrality from 3 to 5 hours after breakfast even granting that dinner has been taken still if we look at the results of the afternoon they do not give nearly so pronounced a verdict in favor of the influence of the mid-day meal for on nearly all the 9 days of observation, there is a return to acidity in periods varying from ¾ to 4 hours after this meal.

As regards tea which was usually taken from 5 to 6 o'clock while the influence is felt it is speaking generally not nearly so marked and in some instances not marked at all, even when I arranged to eat articles which might affect it—e. g. Dec. 26, Took tea at 6 o'clock and the principal article of this meal was intentionally meat. Just before tea 100 c. c. were neutralized by 5 c. c. NaHO. sol., while 2 hours afterwards 100 required 18 and in 4½ hours 100 required 28.

According to these observations, then Delvand's view that neutral or alkaline urine is seen only in the morning and that acidity is present during the remainder of the day, is distinctly contradicted. So also is Fustier's view that the maximum acidity is about 4 hours after dinner. In no instance was this so in my own case, neither was it as he states "Always neutral or alkaline about 8 or 9 in the morning or before the ingestion of any food," but exactly the reverse.

Byasson, as I stated at the beginning of this paper, "Affirms that the urine is least acid after the first meal, while the most acid is that during the night." With the latter part of this view I agree as evidenced by my own urine and also more or less with George's, who states that the alkaline reaction appears 2 hours after the meal.

Thus far then I seem to contradict Fustier and Delavand, but I have only been considering my own particular urine and when I come to consider some of the urines of other persons I

will, to use a vulgar phase, soon "knock the bottom" out of the contradiction.

To sum up then, my urine is very acid in the morning and about an hour after breakfast it begins to decline rapidly till it reaches neutrality about or shortly after mid-day meal: further there is no doubt that each meal influences it, that which evidently does so most is breakfast, for from an acidity of 100 c. c. of urine requiring 24 c. c. or 30 of NaHO. sol. it will in an hour or two fall rapidly, but other meals do so altho perhaps not so apparent for as you may nearly always notice there is neutrality maintained for several hours.

Again we may say that after tea there is not so marked an effect, but there nearly always is some effect towards lessening of the acidity and then we must remember that this meal is usually a light meal compared with other meals of the day. To prove this I took at tea Dec. 28., at 5.30 two eggs. At 5 o'clock the acidity had been 100 c. c.=24 c. c. NaHO. sol. At 7 o'clock about 1½ hrs. after 100 c. c.=20 c. c. NaHO. and at 8 o'clock 100 c. c.=7. 5 of the solution.

Respecting the greater acidity of the morning, we must remember that we have more or less the whole accumulated acidity of the night without food.

The observations of Feb. 10 do not shew any minimum of acidity towards 1 or 2 o'clock, such as there is in the daytime. See table.

I may here state that the total acidity expressed in grammes of oxalic acid, calculations being made for 4 days, was as follows:—

Dec. 26	gms. 1.508.
27	1.181.
28	1.152.
29	2.324.

Average 1.546 gms.

Vogel puts the figure at from 2 to 3 gms. Kerner at 1.8 to 2 gms. My figure is slightly under Kerner, but considering my slight physical build it probably coincides with Kerner.

We come now to consider other urines and first I will take that of a party T. N. McG. who has done everything he could to help me.

I gave him litmus paper and got him to note the reactions on 9 different days.

As you will see from the tables the following is a summary of the results:

	Neutral.	Acid.
Before breakfast,	7 days.	2 days.
Before dinner (or after b'k.)	6 "	3 "
After dinner,	2 "	7 "
Before tea,	3 "	6 "
After tea,	1 "	8 "
Evening,	one day not taken,	8 "

On one day Feb. 3, I got samples of this gentleman's urine, and examined them myself with the following results:—

		Urine.	NaHO. sol
Before breakf't,	7 a.m.	Ac. 100Cc.	=3 to 4Cc.
½ after "	10.30	Ac. 100	=4
3 " "	1.30	N.	
1½ after dinner,	4	Ac. 100	=5
2½ to 3 "	5.30	N.	
1 after tea,	7	Ac. 100	=6

Feb 11. Took lunch at 10 p. m Passed no urine between that and 7 a. m., when urine was slightly acid, you see then from this case what a difference there is. After examining my own urine and finding it so markedly acid, I was rather surprised when morning after morning he would give me "neutral" as the result: So much so that on several occasions I had the specimen sent and examined it myself.

Further, I found out in his case the following fact:—He never was in the habit of taking anything after his six o'clock meal till breakfast next morning. In such cases the urine was always neutral. But when he accidentally twice and when on the third occasion by my instruction took lunch about 10 o'clock at night, then in the morning the urine was slightly acid.

I would like also to call your attention to this case to note how slight the

amount of acidity there was relatively and absolutely for the whole day. You notice from the tables that on Feb. 3., whem I estimated the acidity in no case did 100 c. c. urine require more than 6 c. c. Na.HO. sol. for neutralization.

Here then is a direct support of Fustier's views, and a direct contradiction of the views of Byasson, Neubauer and Vogel.

You see in my own case and in that of T. N. McG. conditions which are just the converse of each other.

I will now give you the reactions of another man in whom the conditions are very much like my own. These are given on table.

A. G.	Dec. 30.	Dec. 31.
Before breakfast,	Ac.	Ac.
After "	Ac.	Ac. (faint)
Before dinner,	Ac.	N.
After "	N.	N.
Before tea,	Ac.	N.
After "	Ac.	Ac.
Evening,	Ac.	Ac.

From the above we observe that the urine is always acid in the morning and that after breakfast the change comes. It was impracticable for me to make a quantative estimation in this case.

Another man E. H. M. also took reactions for me and he gave acid every time, but I do not give this much weight, as he is not sufficiently reliable.

The last case I give is another which is in opposition to the findings of my own.

Case of M. E., Dec. 30 :—

Before breakfast,	N.
After "	N.
Before dinner,	Ac.
1 hour after dinner,	Ac.
2 " "	Ac.
Before tea,	Ac.
After "	Ac.
Evening,	Ac.

Feb. 6.—Urine passed at 8 o'clock, not taken.

Before breakf't, 9 o'clock,	N. or slightly Ak.	
1 hour after breakfast,		Ac. 100 = 8
2¼ " "	"	Ac. 100 = 15
1 " "	dinner,	Ac. 109 = 20
2½ " "	"	Ac. 100 = 6
5 " "	"	Ac. 100 = 20
2 " "	tea,	Ac. 100 = 20
4 " "	" (evening)	Acid.

In order to make sure that the reaction of urine for the time examined was taken and not the average for the night. I got this party to give me samples as below, with these results shewing that the urine secreted then was actually neutral.

February 7 :—

8 o'clock, before breakfast,	N. or slightly A. K.
9 " " "	N.

My position then is this, that while Fustier who holds that the morning urine is least acid is partly right. Byasson, Neubauer and Vogel who hold the opposite view are also partly right.

It looks as if these different observers had only examined the urine of one person and drawn conclusions therefrom and for that reason they partly state a truth but are too limited in its application, for exactly opposite conditions may obtain and yet be strictly within physiological limits as all persons, myself included, at the time of observation were in strictly good health.

We come now to consider the application of these facts and in this connection, I will give you the opinions of a later investigator on this subject, Lauder Brunton. The following is an extract from a lecture of his in the Brit. Medical Journal, Oct. 20, 1894, p. 857.

"The most important constituents of the blood are chloride of sodium and water. Chloride of sodium is a neutral salt, but during digestion both it and water are decomposed in the gastric glands and hydrochloric acid is poured into the stomach while a corresponding amount of soda is

returned into the blood, and its alkalinity increases *pari passu* with the acidity of the stomach. Part of this alkali is excreted in the urine so that the urine during digestion is often neutral or alkaline, and possibly some of it passes out through the liver with the bile of the pancreas and intestinal juice. where, again mixing with the chyle from the stomach, neutralisation takes place. so that neutral and comparatively inactive chloride of sodium is again formed from the union of active alkali and acid. But it is most probable that what occurs in the stomach occurs in the other glands. and that it is not merely excess of alkali resulting from gastric digestion which is poured out by the liver, pancreas, and intestine, but that these glands also decompose salts, pour the alkali out through the ducts and return the acid into the blood.

In order to make this statement more plain. let us work out a case in accordance with these principles:—

Let a man take breakfast at 8 or 9 o'clock; secretion of gastric juice and decomposition of NaCl. is begun. The surplus of soda thus formed is returned to the blood and this of course in quantity as digestion goes on. Thus the blood is rendered more alkaline and the urine less and less acid contemporaneously. Suppose that the gastric digestion goes on for 3 hours, the urine should be least acid then.

But all the soda is not excreted by the kidney; part of it goes to create the alkalinity of the intestinal juice. pancreatic juice, bile etc. And part of the alkali mixing with the chyle is used up neutralizing the HCl. from the stomach giving neutral NaCl. Then absorption of the alkaline contents of the intestine will take place, all of which tends to keep up the alkalinity of the blood and hence of the urine.

According to this the urine ought to remain alkaline or neutral during all the period of gastric and intestinal digestion.

But we must take into consideration another factor, viz.; the latter part of "that these glands also decompose salts, pour the alkali through the ducts and return the acid into the blood."

This then would explain why after gastric and during intestinal digestion there is a return to the acid state.

Now in our imaginary case, at the end of 3 hours the acidity would be least and there would be an immediate decline of alkalinity and a corresponding rise in acidity.

Then again, suppose that in 4 hours he takes more food, there should be a still greater alkalescence, for then we have two forces at work, the one returning alkali to the blood and the other returning acid, but as the latter is further "under way" there will probably be a greater or less inclination towards acidity just at first which will gradually fall towards neutrality or alkalinity as gastric digestion goes on, so that in an hour or two after the second meal the forces will be more or less balanced and from this onwards as intestinal digestion of remainder of first meal and the beginning of the second meal is proceeding there will be a gradual return to acidity.

Again with a 3rd meal we would have a repetition of this change of conditions till ultimately 5 or 6 hours after a meal, say the last at night, when the stomach has finished its work and there is an ascendency of intestinal action there will be an increase of acidity of blood and hence of urine.

I do not know on what facts Brunton formed this theory, but I am persuaded that it is inadequate, because while it covers such a case as my own, how are we going to explain from this platform the neutrality or let me say the lessened acidity in the morning of such a case as that of T. N. McG. or M. E.

I certainly think that to complete his explanation granting that it is correct something has to be either added or substracted.

It appears to me that it might be explained by the rapidity of absorption of the intestinal contents. During their digestion in the intestine there is as shown, an increase of acidity, but they are alkaline in consistence themselves and if they are absorbed very slowly they may of themselves neutralize the acidity and maintain the neutrality of the urine.

I merely suggest this, but I think it is well worth attention, as the fact of it is one would give us a remarkable key to the activity of intestinal digestion and absorption.

In concluding this part of my paper, I may just add that I have details of the diet of the several parties and am perfectly sure that the difference in quality was certainly not sufficient to cause the great differences of reaction in the different parties.

Dec. 16th, 1894.

Reaction of Urine.

Ordinary Diet.

Hour.	Time from Meals.	Reaction.	Sp. Gr.	Quantity.	Colour.
8.30	Before breakfast.	Acid.	1025	℥ix.	No. 4
9.30	1 hr. after breakfast.	Slightly acid.	1013	℥iv. ss.	No. 3
10.30	2 " " "	N.	1010	℥iii. ss.	No. 3
12.30	½ " " dinner.	N.	1012	℥ii. ʒv.	No. 1
1.30	1 " " "	N.	1003	℥vi.	No. 1
2.30	2 " " "	N.	1014	℥v.	No. 1
4.00	3½ " " "	Slightly acid.	1012	℥iii. ʒii.	No. 1
5.30	5½ " " "	Acid.	1010	℥ii.	No. 3
6.30	½ " " tea.	Acid.		℥ix.	No. 3
7.30	1½ " " "	Acid.	1003	℥viii.	No. 2
10.30	4 " " "	Acid.	1021	℥iii. ss.	No. 3
11.30	5½ " " "	Acid*	1010	℥iv. ss.	No. 3
During night		Acid.	1010	℥v. ss.	No. 3

Dec. 17th, 1895.

Reaction of Urine.

Milk diet.

Relation to Meals.	Reaction.	Sp. Gr.	Quantity.	Colour	
Before breakfast.	Ac.	1025	℥iii. ss.	No. 4	25 min. KHO. neutralised ℥i.
1 hr. after breakfast	Ac.		℥vii.	No. 4	20 " " " ℥vii.
2 " " "	Ac.		℥vi.	No. 4	
3 " " "	N.		℥i.	No. 1	
1 " " dinner.	N.	1024	℥i. ℥ii.	No. 2	
2 " " "	N.	1016	℥ii. ℥vi.	No. 2	Possibly slightly acid.
3 " " "	Ac.	1006	℥iii.	No. 2	5 M. K. H. O. neutralised ℥i.
4 " " "	Ac.	1005	℥iv.	No. 3	
2 " " tea.	Ac.	1025	℥ii. ℥vi.	No. 4	
4½ " " "	Ac.	1025	℥ii. ss.	No. 3	15 M. K. H. O. neutralised ℥i.
During night.	Ac.	1012	℥xi.	No. 2	
Before breakfast.	Ac.	1024	℥iv.	No. 3-4	

Dec. 26th, 1894.

Reaction of Urine.

Hour.	Relation to Meals.	Quanity.	Sp. Gr.	Colour	Reaction	Urea. Na H O. c.c. cc.	Acidity expressed in grms. of Oxalic Acid.
8.45	Before breakf'st	155 c. c.	1023	No. 3	Ac.	100=16	0.248
11.00	1½ hrs. after do.	80	1020	No. 2-3	Ac.	100=8	0.064
1.30		225	1016	No. 2	N.		
3.00		250	1009	No. 1	Ac.	100=2	0.05
6.00	Before tea.	450	1007	No. 1	Ac.	100=5	0.225
8.00	2 hrs. after tea.	75	1016	No. 2	Ac.	100=18	0.135
10.30		100	1019	No. 2-3	Ac.	100=28	0.28
During night.		385	1015	No. 3	Ac.	100=16	0.606
							Gms. 1.508= Total per day.

Dec. 27th, 1894.

Hour.	Relation to Meals.	Quanity.	Sp. Gr.	Colour	Reaction	Sol. NaHO. Requ. to Neutralize.	Acidity expressed in terms of Oxalic Acid.
		c. c.					Gms.
8.30	Befors breakf'st	30.5		No. 1	Ac.	100=30.4	.092
11.00	2 hours after do.	50		No. 3	Ac.	100=20	.01
12.50	Before dinner.	50		No. 3	Ac.	100=3	.015
2.45	1¼ hrs. after do.	120	1018	No. 2	N.		
5.00	4 " " "	220	1013	No. 2	Ac.	100=5.4	.118
6.30	½ " " tea.	180	1005	No. 1	Ac.	100=9.6	.172
8.00		260	1004	No. 1	Ac.	100=12	.312
10.00		170	1007	No. 1-2	Ac.	100=22	.110
11.30		50		No. 2			
During night.		180	1024	No. 3	Ac.	100=24	.352
							1.181=

Total for 24 hours. Allow a little for 11.30, which was not taken.

Dec. 28th, 1894.

Hour.	Relation to Meals.	Quanity.	Sp. Gr.	Colour	Reaction	Sol. required to Neutralize.	Acidity expresse in terms of Ac. Oxalic.
		c.c.					Gms. Calculated last sheet.
8.30	Before breakf'st	180	1024	No. 3	Ac.	100=24	
11.30	2 hrs. after do.	60	1023	No. 3	Ac.	100=24	.14
12.15	2¾ " " "	25		No. 2	Ac.	100=16	.04
1.00	¾ hr. after din'r	100	1010	No. 2	Ac.	100=9.8	.098
2.00	1¾ " " "	180	1004	No. 1	N.		
4.00	3¾ " " "	105	1013	No. 2	Ac.	100=5.2	.053
5.00	4¾ " " "	60	1020	No. 2	Ac.	100=24	.144
Tea at 5.30							
7.00	1½ " " tea.	100	1011	No. 2	Ac.	100=20	.20
8 00	2½ " " "	155	1005	No. 1-2	Ac.	100=7.5	.118
9.00	3½ " " "	40		No. 1-2	Ac.	100=9.6	.038
12.00	6 " " "	130	1020	No. 2	Ac.	100=12	.156
During night, probably ab't 2 o'clock.		2.50	1009	No. 1	Ac.	100=6.6	.165
							1.152

Dec. 29th, 1894.

Hour.	Relation to Meals.	Quanity.	Sp. Gr.	Colour	Reaction	Sol. required to Neutralize.	Acidity expressed in terms of Ac. Oxalic.
		c. c.					
9.00	Before breakf'st	160	1021	No. 3	Ac.	100=20	.320
12.00	2½ hrs. after do.	65	1023	No. 3	Ac.	100=24	.156
1.40	1 hr after dinner	200	1003	No. 2	Ac.	100=4	.08
2.30	2 " " "	250	1001	No. 1	Ac.	100=0.5	
3.30	3 " " "	80	1010	No. 2	Ac.	100=8	.640
4.30	4 " " "	60	1016	No. 2-1	Ac.	100=16	.096
7.30	2 hrs. after tea.	205	1011	No. 2	Ac.	100=20	.510
11.00		205	1014	No. 2	Ac.	100=20.8	.426
About 1 a. m.	Night.	120	1006	No. 1	Ac.	100=8	.96
9. a. m.	Before breakf'st	215	1023	No. 2	Ac.	100=24	

2.324

Average total for 4 days=Gms. 1.546 oxalic ac.

Dec. 30th, 1894.

Hour.	Relation to Meals.	Quanity.	Sp. Gr.	Colour.	Reacsion.	Sol. required.
11.30	Before breakfast.	25		No. 2-3	Ac.	100=30
1.00	1 hr. after "	40		No. 2	Ac.	
3.00	3 " " "	70	1019	No 2-3	N.	100=32
4.30	4½ " " "	115	1012	No. 1-2	N.	
5.00	5 " " "	120	1091	No. 1	N.	
Tea at 5 o'clk						
6.00	1 " " tea.	175	1006	No. 1-2	Ac.	100=2
7.00	2 " " "	285	1003	No. 1	Ac.	100=1
9 o'clock.	Two apples.					
12.00		195	1020	No. 2	Ac.	100=14
1.00	During night.	25		No. 2	Ac.	100=32
7.00		265	1012	No. 3	Ac.	100=16
9 00	Before breakfast.	35		No. 2-3	Ac.	100=32

Dec. 31st, 1894.

Hour.	Relation to Meals.	Quanity.	Sp. Gr	Colour.	Reaction.	Sol. required to Neutralize.
9.00	Before breakfast.	35		No. 2-3	Ac.	100=32
12.00	2½ hrs. after "	45		No. 2-3	Ac.	100=20
1.00	3½ " " "	40		No. 3	N., or slight acid	100=1
Dinner at 2.						
3.00	1 " " dinner.	55		No. 3	Ac.	100=12
4.00	2 " " "	225	1005	No. 1	N.	
5.00	3 " " "	125	1019	No. 2	N.	
7.30	2 " " tea.	190	1010	No. 1	Ac.	100=3
9 00	4½ " " "	180	1011	No. 1	N.	
10.00	Tea and cake at 9.45	85	1015	No. 1	N +	
11.00	1½ hours after.	20		No. 2	Ac.	
12.00		85	1014	No. 2	Ac.	100=12
3 a. m.		205	1010	No. 2	Ac.	100=10

Jan. 1st, 1895.

Hour.	Relation to Meals.	Quanity.	Sp. Gr.	Colour.	Reaction.	Sol. required to Neutralize.
8.30	Before breakfast.	130	1026	No. 3	Ac.	100=28
12.30	3¼ hrs. after "	95	1026	No. 3	Ac.	100=12
2.00	1 " " dinner.	45		No. 3	Ac.	100=6
3.00	2 " " "	60	1020	No. 2	N.	
5.00	4 " " "	135	1015	No. 2	Ac.	100=8
7.00	1½ " " tea.	235	1007	No. 1	Ac.	100=8
8.00	2½ " " "	135	1002	No. 1	Ac.	100=4
10.00	4½ " " "	85	1019	No. 2	Ac.	100=8
11.00	Milk at 10.	20		No. 2	Ac.	100=30
1.30		100	1021	No. 2	Ac.	100=24
8.30	Before breakfast.	135	1021	No. 3	Ac.	100=26

Feb. 10th, 1895.

Hour.	Relation to Meals.	Reaction.	Solids required to Neutralize.
8.00	2 hours after tea.	W.	
9.00	3 " " "	Ac.	100=8
10.00	4 " " "	Ac.	100=16
11.00	5 " " "	Ac.	100=20
12.00	6 " " "	Ac.	100=14
1.00	7 " " "	Ac.	100=23
3.00	1½ " " supper.	Ac.	100=25

Reactions of Urine of T. N. M.

Dec. 22:

Before breakfast .....N.
" dinner .....Ac.
After " .....Ac.
Before tea .....Ac.
After " .....Ac.
Evening .....Ac.

Dec. 23:

Before breakfast .....N.
" dinner .....N.
After " .....Ac.
Before tea .....Ac.
After " .....Ac.
Evening .....Ac.

Dec. 27th:

Before breakfast .....N.
After " .....N.
Before dinner .....N.
After " .....Ac., faint.
Before tea .....Ac.
After " .....Ac.
Evening .....Ac.

Dec. 28:

Before breakfast .....N.
After " .....N.
Before dinner .....N.
After " .....Ac.
Before tea .....Ac.
After " .....Ac.
Evening .....Ac.

Feb. 3rd, 1895:

		NaHO.
Before breakfast, 7 a. m	Ac.	100=3.4
1½ hours after breakfast, 10.30 a. m	Ac.	100=4
3 " " " 1.30	N. strictly.	
1½ " " dinner, 4	Ac.	100=5
2½-3 " " " 5.30	N.	
2 " " tea, 7	Ac.	100=6

Feb. 11th:

Took lunch at 10 p. m. Passed no urine between that and 7 a. m., when urine was acid.

REACTION of URINE OF A. G.

Dec. 30th, 1894:
Before breakfast.....Ac.
After " .....Ac.
Before dinner.....Ac.
After " .....N.
Before tea.....Ac.
After " .....Ac.
Evening.....Ac.

Dec. 31st, 1894:
Before breakfast.....Ac.
After " .....Ac.
Before dinner.....N.
After " .....N.
Before tea.....N.
After " .....Ak.
Evening.....Ac., faint.

Reaction of E. H. M.: Acid each time for two days.

URINE OF M. E.

Dec. 30th, 1894:
Before breakfast.....N.
After " .....N.
Before dinner.....Ac.
1 hour after dinner.....Ac.
2 " " " .....Ac.
Before tea.....Ac.
After " .....Ac.
About 8 o'clock.....Ac.

Feb. 6th, 1895:
Urine passed at 8 o'clock, reaction not taken.
9. before breakfast..N., or slightly ak.
1 hour after breakfast..Ac. 100=8
2½ " " " ..Ac. 100=15
1 " " dinner....Ac. 100=20
2½ " " " ....Ac. 100=6
5 " " " ....Ac. 100=20
2 " " tea.....Ac. 100=20
4 " " " .....slightly ac.

Feb. 7th:
8 o'clock, before breakfast.....N., or slightly ak.
9 " " " .....N.

Selections.

PROF. AUGUSTUS C. BERNAY'S, of the Marion Sims College of Medicine, of St. Louis, has sent us a handsome pamphlet containing the reports of a number of important surgical cases in which he operated last November in the presence of many well-known physicians who were in St. Louis on their way to attend the meeting of the Mississippi Valley Medical Association. The report is published as a compliment to those gentlemen.

THE *American Lancet*, according to the statement of its publishers, will no longer be issued. After acting as editor for twenty-four years, Dr. Leartus Connor retired from the responsibile editorship, and it is supposed that this circumstance is largely responsible for the discontinuance of one of our most welcome and valuable exchanges.—*Ex.*

THE *Buffalo Medical and Surgical Journal* has arrived to a good old age, hale and vigorous, and as aggressive as ever. It seems to partake of the nature of wine which improves with age. Dr. William Warren Potter, the manager editor, writes to us that he proposes to celebrate the semi-centennial anniversary of his journal by increasing its reading pages from sixty-four to eighty, and by making other improvements which will tend to increase its efficiency. May all of us live to celebrate its next semi-centennial anniversary—if not in the flesh, in the spirit at least.—*Ex.*

A map of the world of very convenient size has just been issued by the Rio Chemical Co., of St. Louis. It is an excellent piece of work and up to date, and may be relied upon for accuracy. The Rio Chemical Co. are mailing a copy to every physician in the United States, Canada and Europe.

Maritime Medical News.

MAY, 1895.

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EDITORIAL.

INTER-PROVINCIAL RECIPROCITY OF MEDICAL REGISTRATION.

In our issue of last month we recorded with great satisfaction the completion of the arrangements necessary to be made on the part of the Province of New Brunswick in order to give practical effect to the scheme of inter-provincial reciprocity in the matter of medical registration, as agreed upon by the several Medical Boards of Nova Scotia, New Brunswick and Prince Edward Island.

With increased pleasure we now record that the Medical Council of P. E. Island has also taken the final steps by which its position as one of the contracting parties is fully defined and determined. At its meeting held on April 2nd last, the following resolution was unanimously adopted:

"Whereas, at a meeting of the conjoint committee, composed of duly elected representatives of the several legally constituted Medical Boards of Nova Scotia, New Brunswick and Prince Edward Island, held at Truro, N. S., on Friday, Nov. 24th, 1893, a report was agreed upon in the matter of reciprocal registration to be submitted to the several Medical Boards of these provinces;

And whereas, the said report was duly submitted to this Council at its meeting held on Thursday, Jan. 11th, 1894;

And whereas, this Council then decided to re-commit the report to the conjoint committee with suggestions of certain amendments to be made thereto;

And whereas, the amended report endorsed by the signatures of all the members of the said conjoint committee has been submitted to this meeting and duly considered;

And whereas, this Council is officially informed that the amended report has been adopted by the Medical Boards of Nova Scotia and New Brunswick as the basis of reciprocal registration;

Therefore resolved, that this Council do now, and does hereby adopt the said amended report without further amendment.

Though last of the Maritime Provinces to thus formally accept the basis of reciprocity as laid down in the report of the conjoint committee, Prince Edward Island nevertheless fairly claims to be first in the avowed declaration of her desire to obtain and readiness to realize this true fraternity of the profession in these, as also in all the other provinces of the Dominion. As evidence of this we mention the Medical Act, 1892, of this province, with its specified provisions for reciprocity upon the most broad and liberal terms, also the act to amend the same, passed in 1894, with its further provisions (as set forth in its preamble), to secure the maintenance

of a satisfactory standard of medical education, so as to enable the Medical Society of Prince Edward Island and the Medical Council to co-operate with similar societies and councils in the other provinces, to establish a system of "reciprocal registration"—these acts being the outcome of the earnest desire and vigorous efforts of the Medical Society in this direction, and of the statesmanlike views, the high-toned sentiments and magnanimity of the legislature of the province.

The following official communication from the Registrar of the Medical Board of Nova Scotia to the Registrar of the Medical Council of P. E. Island, dated Feb. 9th, 1894, clearly defines the attitude of Nova Scotia in regard to reciprocity, and places that province in the front rank of those deciding to accept the proposed terms. Dr. Lindsay's communication reads thus:

"I have to inform you that at a meeting of the Medical Board of Nova Scotia held yesterday, the report of the conjoint committee re reciprocal registration for the Maritime Provinces was unanimously adopted without amendment. As soon, therefore, as we are informed that the report has been similarly adopted by the Councils of P. E. Island and New Brunswick reciprocity in registration will be considered as established."

For the general information of our readers, and for the purpose of facilitating, if at all it may, the work now before the committee of the Canadian Medical Association, who are soon to report upon what they consider to be the best means of obtaining a uniform standard of medical education for the Dominion of Canada, we have given this exhibit of what has been already so happily accomplished in this direction in these Maritime Provinces, and now subjoin the following statement of the principal terms of the treaty of reciprocity thus established:

1. The passing of the preliminary or matriculation examination in all cases before beginning or entering upon the course of medical study.

2. The following uniform standard of matriculation examination:

COMPULSORY.

English language—including grammar, composition and writing from dictation.

Arithmetic—including vulgar and decimal fractions, and the extraction of the square root.

Algebra—to the end of simple equations.

Geometry—Euclid, books I., II. and III., with easy deductions.

Latin—including grammar, translation from specified authors, and translation of easy passages not taken from such authors.

Elementary mechanics of solids and fluids, comprising the elements of statics, dynamics and hydrostatics.

OPTIONAL.

One of the following subjects:

History of Canada, with questions in modern geography.

History of England, with questions in modern geography.

French, translation and grammar.
German, " "
Greek, " "

3. The requirement in all cases of a four years' graded collegiate course of four sessions of not less than six months each.

4. The medical curriculum shall include satisfactory and sufficient courses of lectures and instruction in anatomy, practical anatomy, chemistry, practical chemistry, physiology, histology, materia medica, pharmacy, therapeutics, surgery, medicine, obstetrics, diseases of women and children, medical jurisprudence, hygiene, pathology, including bacteriology, together with evidence of attendance for a period of not less than twelve months upon the practice of an approved general hospital.

5. That proof be required that the candidate, previous to graduation or obtaining a diploma, has passed satisfactory examinations in the subjects of the above curriculum, and that the examinations have been conducted and the diploma granted by a medical school, college or university, or other licensing body which itself requires a four years' graded course.

6. In cases where the certificates submitted do not fulfil these requirements, that the applicant be compelled to complete what is deficient, and attend the necessary classes, &c., pass the required examinations and obtain a diploma as specified in last section, or complete the curriculum as above, and then pass the examinations prescribed by the Board or Council before its own examiners.

7. That the requirements as to the medical curriculum shall be enforced in reference to all persons beginning study after January 1, 1895.

8. That the privileges of reciprocal registration shall be open to all persons whose names may be on the register of either province at the date of the adoption of the terms of this agreement, as well as to those who shall subsequently be duly registered.

8. That a person registered in one province and wishing to remove to another, shall be required to bring from the Registrar of the province he is leaving, a certificate shewing that he is at that time a legally qualified practitioner of such province, and that no charge of a criminal or professional character is pending against him, and that on presentation of these credentials alone the applicant be registered on payment of the usual registration fees.

DR. FARRELL'S ADDRESS TO THE GRADUATES OF DALHOUSIE UNIVERSITY.

In his address at the recent convocation of Dalhousie College, Dr. Farrell congratulated the graduates and students on the honors and distinctions they had gained. Thoroughly trained and possessing their degrees, they had got the word "go" from the starter and were entering on the race of life, and while all could not win, he advised each one to resolve that he or she would win or take at least a leading place in the finish. Such a spirit would be sure to materially influence the progress of all. He wished them to keep in mind that in education the moral side in man or woman was by far the most important. The foundation of true education was a strong faith in God and divine promises and that sweet spirit of charity which makes us tolerate the opinions of others. Without this foundation the whole superstructure would be unsteady and unsound. True education, he said, was the harmonious development and growth of all the powers of soul and body, and not the unequal development of one beyond the other. He could remember not a great many years ago, when the craze for mental development and intellectual growth was proportionately far greater than to-day. And to what an extent it was carried, at the expense of health and bodily vigour. Young men devoted themselves to mental work exclusively in season and out of season, so that often when they had just gained the goal for which they were striving the poor body gave way and they sank into untimely graves. This practice, he was glad to say, was to a great extent changed, and to-day physical culture held as high a place in the universities as the intellectual. It was now, he said, beginning to be recognized that the play-ground and the gymnasium should play as important a part as the class-room. That physical education was not neglected at Dalhousie was proved, he thought, by the fact of the students there coming off the victors so often in football in many

a hard-fought field. If he were asked what young Canadians were most lacking in as they started out in the race of life he would mention two faults, one of which was a want of patriotism. If Nova Scotia were as rich in patriotism as she is in natural resources she would be a far more prosperous country. He regretted that so many of our young men after getting an excellent education in Nova Scotia found it necessary to seek a livelihood and preferment elsewhere. It was too much a habit of many young men to come back and make comparisons unfavorable to their own country. Nova Scotia, with her boundless resources, offering preferment equal to that of any country in the world, instead of sending away her own young men should induce those of our lands to come to her. We should always find something to praise in our own country. Joseph Howe said if he could find nothing else to speak highly of in Nova Scotia he would maintain there were higher tides there than elsewhere. Or like the Canadian who was once driven to desperation by the praises of Switzerland at the expense of Canada, exclaimed: "Why, I could take that little country of yours and throw it into Lake Superior and you wouldn't hear it splash." Going out into the world they would expect to realize what they doubtless had heard of being taken by the hand and getting the right hand of fellowship and so on, but he wanted to tell them it did not "palm out." It was only by their own exertions they could achieve success. There was no such thing as luck. Luck meant getting up an hour earlier in the morning than anybody else. In conclusion he would exhort them again to cultivate a spirit of patriotism, a spirit of energy and push, and all together to strive to make Nova Scotia, with her infinite resources, what she ought to be, the brightest gem in the British crown.

Book Reviews.

The International Medical Annual and Practitioners' Index. A work of reference for Medical Practitioner. 8 vo., p.p. 648. Illustrated. Thirteenth year. New York: E. B. Treat, 5 Cooper Union, 1895.

The thirteenth volume of this series compares favorably with its predecessors. The plan of the work has been noticed in previous years. We have no hesitation in pronouncing it to be the best work of its class, containing as it does condensed yet comprehensive accounts of advances in all branches of medical science, with full references.

The special articles which characterize this work are of more than usual interest, and are worth more than the price of the volume.

The illustrations are numerous and well executed. As a whole the book is convenient in size, replete with fresh matter and should find a place in the library of every practitioner.

Transactions of the Antiseptic Club, reported by Albert Abrams. E. B. Treat, Publisher, New York.

This is a book full of wit and humor. In the introduction we note "Criticism of medical works is usually gauged by two factors—the status of the digestive apparatus and the conceit of the reviewer. The latter accommodates his review to stereotyped methods of expression as; "This book has supplied a long felt want; It is useful alike to both physician and student, etc., etc." It has an antiseptic binding, the leaves have been thoroughly iodoformized, and the printers' ink rendered sterile." There is plenty to laugh at in this volume of Transactions of the Antiseptic Club". Here is a prescription that indicates a modern tendency:

Extracti gall-ae (Gray's)	℥iii
Acidi gall-ici (Brown's)	℥i
Olei gaul-theriæ (White's)	℥i
Aquae (Black's)	gall-on

"Mix with Green's universal pestle in Indigo's patent riveted copper-lined mortar, at a pressure of five pounds as determined by Lavender's poundometer: then filter through filtering paper imported by Garnet & Co., No. 116 Alimentary Way, near the Island of Reil, on the Isthmus of Fauces.

"Dr. Always Bite."

Buy it and have a laugh.

Books Received.

The International Medical Annual and Practitioners' Index. A Work of Reference for Medical Practitioners. By a large corps of editors and contributors. New York: E. E. Treat, 5 Cooper Union, 1895. Price $2.75.

Transactions of the Antiseptic Club. Reported by Albert Abrams. Illustrated. New York: E. B. Treat, 5 Cooper Union, 1895. Price $1.75.

Surgery of Two Hundred Years Ago. Illustrated from original copper plates.

This is a very interesting little volume sent out by the Antikamnia Chemical Company of St. Louis.

Infection and Immunity, with special reference to the new Diphtheria Anti-Toxine. By Charles Russell Bardeen, B. A., Assistant in Histology, John's Hopkins University. Reprinted from the School Bulletin.

Annales De Oculisti que. An English edition of this valuable periodical is now published in monthly numbers at New York. By Dr. Geo. T. Stevens.

Annali di Medicina Navale. Sennaio, 1895. Fascicolo 1, Fascicolo 4. Malattie. Predominante Nei Paesi Caldi E. Temperati. Scunaio, 1895.

THE time for the meeting of the Maritime Medical Association is approaching. The present indications point to a large and successful gathering. A number of interesting and important papers will be read. The citizens and Profession of Halifax will leave nothing undone to entertain the visitors. Every practitioner should strive to be present. Titles of papers should be sent in as early as possible.

The editors of the *Saint Louis Medical and Surgical Journal* announce a series of articles upon special methods in staining in microscopy to begin with the June number. These articles written by the celebrated Unna will be translated by Dr. Cale, of Saint Louis. A limited number of copies of entire series will be printed in pamphlet form. Those desirous of obtaining copies should subscribe early.

The American Medical Publishers' Association will hold an important meeting at Baltimore, at the same time of the American Medical Association. Among other subjects to be discussed will be commissions, reading notices, wrappings, the editor as business manager, trade advertising, insert advertisements, premiums, speculative advertisers, copy. This association is daily growing and will be an important factor in medical journalism in the future. Mr. Charles Wood Fassett, of St. Joseph, Mo., is secretary, and Dr. Landon B. Edwards, of Richmond, Va., is the president.

INDIGESTION.—*Oil of cloves*, 2 or 3 minims; *diluted hydrochloric acid*, 15 minims; *tincture of nux vomica*, 20 minims; *compound tincture of cardamom*, 2 fluidrachms. Mix. To make one dose, given before meals, thrice daily. If there is much pain, give about 3 minims of *spirit of chloroform*. If acid eructation is severe, give *sodium bicarbonate*, 10 grains, instead of the *hydrochloric acid*. If there is attendant constipation, give ½ drachm doses *fluid extract of cascara* at bedtime —(J. P. CROZER GRIFFITH, *Philadelphia Polyclinic*, March 2, 1895.)

UNIVERSITY OF DALHOUSIE.

The pass list of the Medical Faculty is as follows, order alphabetical :—

Final M.D., C.M. Examinations.

Fairbanks, Harry Gray.
McDonald, John Clyde.
McKay, Catherine Joanna.
Moore, Ernest Fraser.
Munro, Cranswick Burton.
Murphy, George Nelson.
Simpson, Henry Osmond.

THIRD YEAR.

McEwen, Henry Emanuel.
Olding, Clara Mary.
Ross, Alexander.
Williamson, Samuel W.

Primary M.D., C.M. Examinations.

Bentley, Robie Dugwell.
Bissett, Ernest Eugene.
Fairbanks, Harry Gray.
Gates, Charles Randall.
Grierson, Robert.
MacDonald, William Henry.
Munro, Cranswick Burton.
Payzant, Henry Allison.
Slauenwhite, Stephen.

FIRST YEAR.

Archibald, Mathew George.
Gandier, George Gaw.
McKenzie, Kurdoch Daniel.
Thompson, Alfred.

DISSOLVED in the "Wine of Cod Liver Oil" (Stearns) are the active principles of Cod Liver Oil, to the exclusion of the oil itself—a statement which a somewhat extended examination has to some extent confirmed. Thus on extracting the wine with ether and carefully treating the ethereal extract (which is an oily, brown, resinous body, having a peculiar fishy smell) with a strong sulphuric acid solution of glucose, the beautiful purple reaction characteristic of biliary constituents is obtained. The same reaction is effected when the extract used in the preparation of the wine is similarly tested, but to a more marked degree. Recent investigation has led to the isolation of several distinct bodies in Cod Liver Oil, notable amongst which are the alkaloids aseline and morrhuine, in association probably with morrhuic, formic, butyric and phosphoric acids. These principles have been tested clinically, and the results formed the subject of an exhaustive report by Gautier and Mourgues in the *Journal de Pharmacie*, March, 1890, who concluded that the combined active principles of Cod Liver Oil act as powerful stimulants of nutrition and assimilation and show definitely the nature of the principles to which the oil to some extent owes its valuable medicinal properties. The wine evinces an acid reaction, is alcoholic, and contains also Peptonate of Iron.—THE LANCET, London, Eng., July 7, 1894.

THE WILD FLOWERS OF CANADA.

This Dominion will soon be covered with wild flowers as with a carpet. It is interesting to hear that splendid prizes are to be given to those who know the Wild Flowers of Canada by name, form and color. European and American judges of floral nature say Canadians should be so carried away with the beauty of their own native bloom as to ensure an acquaintance with the Wild Flowers of Canada by every man, woman, boy and girl in the Dominion.

In this connection the Montreal STAR is coming in for much praise for a splendid work it is publishing, entitled "The Wild Flowers of Canada," in portfolio form, sixteen flowers in each portfolio, three hundred plates in all, natural colors and natural size, the whole forming an invaluable treasure for the library. For a limited time these valuable portfolios may be obtained from the Montreal STAR or local newsdealers at 15 cents each. Amazingly cheap.

HALIFAX MEDICAL COLLEGE,

HALIFAX, NOVA SCOTIA.

Twenty-Seventh Session, 1895-96.

THE MEDICAL FACULTY.

ALEX. P. REID, M. D., C. M.; L. R. C. S. Edin.; L. C. P. & S. Can.; Emeritus Professor Medicine and Professor of Medical Jurisprudence.
WM B. SLAYTER, M. D; M. R. C. S. Eng.; L. R. C. P. Lon.; F. O. S. Dub.; Emeritus Professor of Obstetrics and Gynæcology.
EDWARD FARRELL, M. D., Professor of Surgery and Clinical Surgery.
JOHN SOMERS, M. D., Professor of Medicine.
JOHN F. BLACK, M. D., Professor of Surgery and Clinical Surgery.
GEORGE L. SINCLAIR, M. D, Professor of Nervous and Mental Diseases.
DONALD A. CAMPBELL, M. D., C. M.; Professor of Medicine and Clinical Medicine.
A. W. H. LINDSAY, M. D., C. M.; M. B. C. M., Edin.; Professor of Anatomy.
F. W. GOODWIN, M. D., C. M.; Professor of Materia Medica.
M. A. CURRY, M. D., Professor of Obstetrics and Gynæcology
STEPHEN DODGE, M. D., Professor of Ophthalmology and Otology.
MURDOCH CHISHOLM, M. D., C. M.; L. R. C. P., Lond.; Professor of Clinical Medicine and Therapeutics.
NORMAN F. CUNNINGHAM, M. D., Adjunct Professor of Surgery.
WILLIAM TOBIN, F. R. C. S., Ire., Professor of Laryngology and Rhinology.
G. CARLETON JONES, M. D., C. M.; M. R. C. S., Eng.; Professor of Diseases of Children.
LOUIS M. SILVER, M. B., C. M., Edin.; Professor of Physiology.

LECTURERS, DEMONSTRATORS, ETC.

GEO. M. CAMPBELL, M. D., Lecturer and Demonstrator of Histology.
W. D. FINN, M. D., Lecturer and Demonstrator of Pathology.
F. U. ANDERSON, L. R. C. S., L. R. C. P. Ed.; M. R. C. S. Eng.; Demonstrator of Anatomy.
C. E. PUTTNER, PH. M., Instructor in Practical Materia Medica.
W. H. HATTIE, M. D, C. M., Lecturer on Bacteriology and Hygiene.
WALLACE MCDONALD, B. A.; Legal Lecturer on Medical Jurisprudence.
A. I. MADER, M. D., C. M., Class Instructor in Practical Surgery.
MONTAGUE A. B. SMITH, M. D., Class Instructor in Practical Medicine.
C. DICKIE MURRAY, M. B., C. M., Edin.; Lecturer on Embryology.
JOHN STEWART, M. B., C. M., Edin.; Lecturer and Demonstrator of Pathological Histology.
THOS. W. WALSH, M. D., Assistant Demonstrator of Anatomy.

EXTRA MURAL LECTURER.

GEORGE LAWSON, PH. D., etc., Professor of Chemistry and Botany at Dalhousie College.

FACULTY OF PHARMACY.

AVERY F. BUCKLEY, L. PH., Lecturer on Pharmacy.
F. W. GOODWIN, M. D., C. M., Lecturer on Materia Medica.
G. M. CAMPBELL, M. D., Instructor in Microscopy.
GEORGE LAWSON, PH. D., etc., Professor of Chemistry and Botany.
ALBERT H. BUCKLEY, PH. M., Examiner in Mat. Med. and Botany.
W. H. SIMPSON, PH. G., Examiner in Chemistry.

The Twenty-Seventh Session will open on Wednesday, Oct. 3rd, 1895, and continue for the seven months following.

The College building is admirably suited for the purpose of medical teaching, and is in close proximity to the Victoria General Hospital, the City Alms House and Dalhousie College.

The recent enlargement and improvements at the Victoria General Hospital, have increased the clinical facilities, which are now unsurpassed, every student has ample opportunities for practical work.

The course has been carefully graded, so that the student's time is not wasted.

The following will be the curriculum for M. D., C. M. degrees:

1ST YEAR.—Inorganic Chemistry, Anatomy, Practical Anatomy, Botany, Histology.
(Pass in Inorganic Chemistry, Botany, Histology and Junior Anatomy.)

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

3RD YEAR.—Surgery, Medicine, Obstetrics, Medical Jurisprudence, Clinical Surgery, Clinical Medicine, Pathology, Bacteriology, Hospital, Practical Obstetrics, Therapeutics.
(Pass in Medical Jurisprudence, Pathology, Materia Medica and Therapeutics.)

4TH YEAR.—Surgery, Medicine, Gynæcology and Diseases of Children, Ophthalmology, Clinical Medicine, Clinical Surgery, Practical Obstetrics, Hospital, Vaccination.
(Pass Final M. D., C. M Exam.)

Fees may now be paid as follows:

One payment of	$250.00
Two of	130.00
Three of	90.00

Instead of by class fees. Students may, however, still pay by class fees.

For further information and annual announcement, apply to—

G. CARLETON JONES, M. D.,

Box 246. **Secretary Halifax Medical College.**

MARITIME MEDICAL ASSOCIATION.

The Fifth Annual Meeting of the Association will be held in Halifax on

Wednesday and Thursday,

July 3rd and 4th, 1895.

All registered medical men in the Maritime Provinces are invited to attend and to become members of the Association.

Gentlemen who intend to read papers are requested to forward at their earliest convenience the titles of the same to the Secretary.

GEORGE. M. CAMPBELL, *Hon. Sec.*

Diphtheria Antitoxin.

A Strictly Reliable Serum Prepared after the Method of Behring and Roux.

Inasmuch as the Antitoxic Serum produced in our Bacteriological Department will not be available until April or May, we have perfected arrangements for a supply of **DIPHTHERIA ANTITOXIN** prepared under the supervision of **Ira Van Gieson, M.D., and Nelson L. Deming, M.D.,** the well known bacteriological experts of New York City, and issued under their certificate of quality and strength.

This Antitoxin conforms to the conditions of the ordinance of the Board of Health of New York City, is absolutely sterile, and will be supplied in vials of 10 Cc. each.

Three grades of strength will be furnished.

1. A weaker serum which will contain 600 antitoxin units for immunizing purposes and for the treatment of mild cases. Issued under **blue label**; price per vial $1.90, strictly net cash.

2. A stronger serum of 1000 antitoxin units for curative purposes—of sufficient strength for the great majority of cases. Issued under **yellow label**; price per vial $3.50, strictly net cash.

3. A still stronger serum of 1500 antitoxin units for exceptionally severe cases. Of this strongest grade our supply for the present will be limited. Issued under **green label**; price per vial, $5.25, strictly net cash.

Orders may be sent to our Detroit address; our New York City office at 90 Maiden Lane; our branch at 1008 Broadway, Kansas City, Mo.; or our laboratory at Walkerville, Ont.

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