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REPORT UPON EIGHTY-NINE CASES OF APPENDICITIS
TREATED IN THE ROYAL VICTORIA HOSPITAL, MONT-
REAL, DURING THE YEAR ENDING 31st DECEMBER,
1898.

BY

E. L. ARCHIBALD, M.D., (formerly) Resident House Surgeon.

During the year 1898, 89 cases of appendicitis were admitted to the surgical wards of this hospital. Of these there were operated 73. The appendix was removed incidentally during operation for three other conditions,—one a cancer of the sigmoid flexure, in which the appendix *per se*, was acutely inflamed; the second, a pyosalpinx, in which the appendix showed external inflammation by contiguity; and the third an intra-peritoneal lumbar abscess of unknown origin, in which the appendix was normal. Three others, admitted last year, were treated to a conclusion during this year. The statistics which follow are based upon an analysis of those cases only in which the appendix was removed, and in which, therefore, the condition of the organ was clearly demonstrated.

In preparing a statistical report of any considerable number of appendicitis cases, one is met at the outset with the difficulty of a suitable classification. The lesions of the disease are protean both in character and in degree. Symptoms vary from those of the so-called appendicular colic up to those of a perforative general peritonitis. As a consequence, classifications are numerous, and of those who have written treatises upon the subject scarcely one but has formulated his own. Some ground their classification upon a purely anatomical basis, others on a purely pathological basis, others on a clinical basis, and still others on a combination of two or of all three.

For the purposes, however, of a hospital report such as the present it seemed to me necessary to devise a classification which would present

the result of a comparison of the pathological findings in the operated cases with the corresponding case reports. The possible value of such a report must lie mainly in the direction of advancing clinical knowledge, must help towards the end of accuracy in diagnosis. Any advance, however, in systematized clinical knowledge must be made along the lines of types elaborated in details. These types—in any disease the pathology of which is at all definitely known—must be primarily pathological and secondly clinical. That is, working backwards from the pathological findings to clinical data, we seek by induction to establish classes in which frequently recurring pathological lesions correspond—if not in all cases, at least in a large majority—with frequently recurring clinical signs and symptoms. And when we have enough of the particulars we shall be able to lay down definitely the general.

Advance, therefore, lies in the amassing of a large body of reliable particulars and their analysis in thorough and elaborate case reports; in careful cross examination of the patient as to details, and in a rigid comparison of these clinical data with subsequent operation findings. These are the trite, every day, almost instinctive principles of every observer, but they have need of being kept prominently in mind in analysing any series of hospital cases, and must form the basis of classification for such cases.

Upon these lines, therefore, the following classification^{*} was devised. It is confessedly incomplete, inasmuch as it embraces only such cases as occurred in the hospital surgical service during the year, leaving out of account the specific inflammatory affections,—tuberculous, typhoid, actinomycotic—of which we had no examples.

Thus :—

Class I.—

The appendix enlarged and often twisted, kinked, or strictured; the mucosa swollen; the walls thickened; there may be small submucosal hæmorrhages, innocuous concretions, or even slight ulceration; and there may be adhesions externally.*

Class II.—

In which the appendix, with or without the lesions of Class I., is distended with pus, the mucosa ulcerated, and the serosa and meso-appendix are inflamed.

Class III.—

In which the appendix is gangrenous, in whole or in large part; but without perforation.

* The term catarrhal has been frequently employed—in a very general and rather loose way—to designate a majority of the cases of this class.

Class IV.—

In which the appendix is perforated, and there is more or less localised peritonitis with abscess.

Class V.—

In which there is general septic peritonitis, following perforation of the appendix, or following septic lymphangitis from a non-perforated appendix.

It is seen, therefore, that mild inflammation with absence of pus, the retention of pus, total rapid gangrene and perforation, are taken as the main pathological landmarks to be kept in view in the clinical consideration of any case. That the classes I, III, IV and V, represent definitely separated pathological conditions, which in the main correspond to definite separable clinical phenomena, will, I think, be generally allowed. The *raison d'être* of class II, is more doubtful. The pathological entity is certainly definite. That it causes, however, symptoms which enable it to be diagnosed clinically is perhaps not generally allowed, and the examples of the condition in this series are too few and the clinical signs in these too incomplete to afford more than slight indications in any direction. Nevertheless it is included in the classification in the hope and belief that larger statistics may bring to light clinical symptoms which can be considered as more or less characteristic of the lesion.

“Ulcerative” appendicitis, which appears in so many classifications, finds no place in the present one because, though it is certainly often the remote cause of definite symptoms—cicatricial stenosis, perforation, etc.—it cannot be said to cause symptoms peculiar to itself, symptoms which enable it to be diagnosed clinically.

It is evidently out of the question to draw conclusions of a far reaching nature concerning such points in the disease as are debatable upon the basis of comparatively so few cases. Statistics of this nature are of value mainly as a contribution to a much larger body of facts which are needed for the study of clinical details. It may, however, be permitted to draw attention to a few of the points which are boldly stated below.

With regard to age, although a very decided majority of the total number of cases came under observation during the age-decennium of 20 to 30, many of these dated their first attack back to that of 10 to 20. Patients come under hospital observation comparatively rarely during a first attack.

In the series of 70 case-reports the question of previous attacks is mentioned in all but three, in all of these with two exceptions the patients had had such. It is noteworthy that these two exceptions

were cases of perforation and general septic peritonitis. That the statistics of other observers do not give such a large percentage of previous attacks is possibly due to insufficient cross examination of the patient. Many patients as a matter of fact answer the question at first with a negative, but on a repetition of the question, admit freely that they have had attacks of pain in the same region before, adding frequently explanatory remarks, such as "but not nearly so bad as this time," or "I was only laid up for a day or so, not worth mentioning." It is a matter of general experience that the appendices of such persons show evidences of previous slight inflammation. Not only that but these same evidences are found none too seldom in patients who have denied all previous attacks.

The preponderance of the male sex is striking: males, 55; females, 15.

Chronic constipation or diarrhoea, chronic or acute indigestion, and over-exertion, usually inculcated in text books as ætiological factors, do not seem to have played in the present series any definite rôle.

With regard to the ætiological relation between concretions and perforation, it is worthy of note that of the 38 nonperforated cases concretions were found in 3, while of the 32 perforated cases they were present in 15, and of the 9 cases in which perforation led to a diffuse septic peritonitis, concretions were found in 7.

That the "onset pain" of appendicitis in general is typically "crampy" or "wavelike," as stated by some authors, does not seem to be borne out. It is very variable both in character and degree. The personal equation in the description of pain plays a very great rôle.

Chill is a rare event in all forms of appendicitis, even in those which perforate and go on to general sepsis. Nevertheless, it is possible that the slight indication afforded by the histories of the present series to the effect that in empyema of the appendix chilliness, at least, was present in half the cases—as one expects in conditions of retained pus,—it is possible, I say, that this indication if well worked out in future case reports, may become a diagnostic sign of some value.

That the totally or extensively gangrenous appendix before perforation may not infrequently be diagnosed, is generally allowed. Yet the signs given by some authors (e. g., Deaver) viz:—abrupt cessation of pain, fall in temperature, anxious expression of countenance, and increased pulse rate, were in the four cases of this series, with the exception of the last mentioned, largely absent. One point, however, which has been more especially noted in the present cases, and generally in the Royal Victoria Hospital surgical service, as indicating the probability of a gangrenous appendix, is the occurrence of a treacherous lull in the pain after a few hours of onset pain, the pulse rate, nevertheless, remaining high or going still higher. In this point, naturally, hospital

case-reports suffer often from insufficient data with regard to the pulse and temperature during the period from onset to admission. The point needs a more elaborate working out in order to settle its importance as a diagnostic factor. With regard to data which might help us to the clinical diagnosis of "imminent perforation," the present statistics yield nothing noteworthy beyond what is above mentioned in connection with empyema and gangrene of the appendix. Progress in this direction would seem to lie in the more thorough and exact history of pulse and temperature, especially the former, from the time of onset up to that of observation in hospital. Exact written records, so far as is possible for the attending physician to make them, would in this respect be of the greatest use.

Concerning the signs of perforation, the statistics, I believe, show that the very distinct value should be ascribed to a history of marked exacerbation of pain occurring at any time after the first few hours.

Painful micturition as a sign of pelvic peritonitis was inconstant. Its presence indicated certainly the condition, but its absence did not certify the absence of a pelvic peritonitis—far from it.

Local tumour could rarely be felt when the peritonitis had become general, but was nearly always palpable in localized cases. With regard to the other clinical signs of localized and general peritonitis, no special remark is called for.

Statistics concerning pulse and temperature were not made out, mainly because of the lack of data before entrance to hospital with which to form a comparison. Isolated observations in the short time between admission and operation are of no use, in so far as statistics are concerned.

With these preliminary remarks I venture to submit the following details :—

Excluding the three cases of abscess mentioned below, we have a series of 70 which have been analysed.

Class I. includes 28 cases ; Class II. 6 cases ; Class III. 4 cases ; Class IV. 22 cases ; Class V. 10 cases.

Three cases of abscess, diagnosed as being due to a perforation of the appendix, are not included in the analysis, inasmuch as the abscess was merely incised and drained, and the appendix not demonstrated. There were 16 cases not submitted to operation. Of these 12 were of the acute type, and subsided within two or three days ; three were recurrent, and one was a chronic abscess following perforation.

Of the 89 cases, 73 were cured ; 2 were improved ; 1 was not improved ; 3 were not treated ; and 10 died. The mortality is thus 11.2 p c. Of the fatal cases, nine were of the general septic peritonitis class, and one was a suppurative mesenteric lymphadenitis subsequent to a chronic inflam-

mation of the appendix of long standing. It is seen, therefore, that the mortality in all but the gravest type of appendicitis is nil; all the clean-cases, and all the perforation cases with localised trouble, even where the localisation was very slight and pus filled the whole right side and pelvis, recovered.

Passing now, to a review *seriatim* of the classes above mentioned, we find the following facts of interest:

CLASS I.—28 Cases.

Ætiology:

AGES—10 to 20 years.....	3
20 to 30 ".....	12
30 to 40 ".....	9
40 to 51 ".....	4

SEX—Male, 20; female, 8.

PREVIOUS ATTACKS—One had one; one had two; two had three or four; and all the rest many—most of them slight, but a few severe attacks.

PREVIOUS CONSTIPATION—Thirteen had none; twelve had more or less chronic trouble; and in three the condition is not mentioned.

PREVIOUS DIARRHŒA—Only in one case; not present in the others.

CHRONIC INDIGESTION is mentioned only in one case.

OVER-EXERTION is mentioned in five cases.

*MICRO-ORGANISMS—*B. coli* comm. was found in all cases in which cultures were taken.

CONCRETION was found in only one case; this was a subacute condition, with tip somewhat distended, and mucosa hæmorrhagic.

In no case is it mentioned in the histories that especial errors in diet or acute indigestion preceded the onset of pain.

Clinical Course, Signs—

ONSET—Pain varied a great deal in its character. In only nine was it of the typically crampy nature usually described. In some it was "slight," in others "severe" from the first. In others it was "dull," "burning," "aching," or "smarting." Whether mild or severe at the onset, the pain, in the later course, became generally severe, although in a few cases it is described as mild throughout. Still later, pain usually subsided into a dull soreness.

SITUATION OF THE PAIN at onset was in nine cases "generalized;" in four "umbilical;" in three in "lower abdominal zone;" in one "epigastric;" in nine "right iliac." In several instances it is noted that, whereas the pain at the onset was generalized in the first attack, it was right iliac in succeeding attacks.

In all cases, save one, where the onset-pain did not begin in the right iliac region, it is noted that it settled in that region sooner or later. In

* In what follows the bacteriological reports are not submitted as being of absolute value, inasmuch as when smear cultures are taken and no Petri plate made till the next day (as was the case in the majority of cultures), the *B. Coli* may kill off other organisms originally present by the rapidity of its growth. The suggestion is owed to Dr. Adami.

the one exception, symptoms throughout were those of a "chronic belly ache."

In twenty-three cases, where the date of the first attack is mentioned, it is found that five were within a year previous to admission; nine from one to two years; three from three to four years; the others dated back to five, six, eight, fourteen, eighteen and twenty-three years.

In twenty-one cases there was no resistance to palpation. In three there was slight, and in one considerable resistance.

TUMOUR in the right iliac region was felt in six cases; in five slight and indefinite, the appendix alone being swollen; in one marked, omentum, cæcum and ileum being all adherent round appendix. In the rest it was absent.

VOMITING occurred in 17 cases, *i.e.*, 60 p.c., absent in 11.

Interval Troubles in Recurrent Cases—

In fifteen (53 p.c.) there was a definite history of chronic trouble in the intervals of attacks. In twelve of these it was chronic soreness in the right iliac region, and in two this was sufficient to render the patient invalid. In one it was a flatulent dyspepsia. In five there was chronic constipation as well, and in one diarrhœa.

CHILL—In four cases. Apparently rather chilly feelings than actual rigors.

TIME OF OPERATION—All were performed in the interval, the shortest lapse of time after the last attack being ten days.

MENSTRUAL TROUBLES were found in two of the eight female cases.

All the cases were discharged cured, except two. Of these, one was a case of chronic inflammation, where the appendix lay embedded in very dense adhesions. Histologically there were found evidences of a chronic inflammatory process, which had gone on so far as to produce slight necrosis of the submucosa. In the after course he developed hæmaturia, a large mass in left hypochondriac and lumbar region, and finally, two months after operation, a second large mass in the right hypochondrium, becoming meantime steadily weaker. He finally insisted on going home, and has not been heard from since.

The other was a case where the appendix was found firmly adherent to the posterior wall of the abdomen and the brim of the pelvis; and the mesentery showed large, fused, glandular masses, which were considered to be the result of a suppurative lymphadenitis by extension from the appendix. Histologically the appendix, according to the Pathological Report, showed only a condition of "chronic catarrhal appendicitis." This case gradually sank, and died 15 days after operation.

There were no complications, save in the two cases just mentioned, and in one other, where hysteria developed seventeen days after operation.

CLASS II.—Empyema of the Appendix. Six Cases.

In these the element of retained pus introduces a new factor into con-

sideration. In three the pus was thick, foetid, and greenish ; in two it was a purulent faecal fluid ; and in one it was a " bloody grumous " fluid.

SEX—Five were males ; one female.

AGES—19 to 33 years.

PREVIOUS ATTACKS—One had had two slight ones in past two years ; two others had had frequent attacks ; one had had three severe ; one four severe and one six slight attacks.

CHRONIC CONSTIPATION was present in one case. Chronic diarrhoea in two cases.

CONCRETIONS were absent in all.

BACTERIA—Coli commune in three ; mixed staphylococci and streptococci in one ; one sterile ; no report in the other.

Clinical Course—

PAIN at the onset in all was around the umbilicus, and crampy or severe in nature ; later it became localized to right iliac region.

RESISTANCE TO PALPATION in three cases ; absent altogether in one case, and amounting in great local rigidity in two.

RESTLESSNESS—Noted only in one case.

LOCAL TUMOUR—Slight in three ; in two due to swelling of appendix alone without omentum ; in one, due also to omentum.

DISTENSION—Absent in all, save one, where it was slight and local.

VOMITING—Present in all.

CHILL was present in three, but slight ; only chilliness.

DATE OF OPERATION—In one, 23 hours after onset ; in one, 40 hours ; in one, two and a half days ; in one, three and a half days ; and in two in the interval.

In this class of cases, one notices the more frequent occurrence of chilly feelings, (viz., in 50 p.c. of the cases), which, though not amounting to rigor, may possibly be considered of some diagnostic value.

CLASS III.—Non-perforated, Gangrenous Appendix. Four Cases.

In two of these, gangrene involved about half the appendix ; in two the whole organ. In one case it involved also a considerable area of the caecum where the appendix lay against it.

AGE—19 to 36.

SEX—Three males ; one female.

PREVIOUS ATTACKS—Three had had occasional slight attacks, one had had none.

CONSTIPATION had not preceded the attack in any case ; nor had diarrhoea.

ORGANISMS—B. coli commune in one case ; mixed coli and staphylococci in another ; sterile in another ; no report in the fourth.

CONCRETIONS were present in two ; in one four small, and in the other one small concretion.

Clinical Course—

PAIN began mildly in three of the cases ; in the other it was very

severe from the first. It was situated, at the onset, in the "lower zone" in one case; in the epigastrium and right hypochondrium in one; and was "generalised" in two. There was no definite exacerbation of the pain in any of the cases. In one it was never severe. In all, it became, sooner or later, localized to the right iliac region.

RIGIDITY present locally in all cases.

RESTLESSNESS noticed in two cases.

LOCAL TUMOUR in two cases.

DISTENSION—Slight local in one case; slight general in one.

VOMITING present in two cases only; and then very slight.

CHILL was not present in any case.

Complications—

In one case a slight nephritis was present at time of operation. This case also developed a left-sided phlebitis about a week after operation.

OPERATION was performed in one case 48 hours after onset; in one 32 hours; in one 78 hours; and in one on the ninth day. The latter would, no doubt, have perforated long before operation, had the appendix not been bound down to the cæcum, and the gangrene gradually involved the whole thickness of the wall of the latter, into which, indeed, it was on the point of perforating.

In these cases it is noticeable that the signs of gangrene usually given—abrupt cessation of pain, fall in temperature, increased pulse rate and anxious expression—were largely absent.

The histories note a treacherous lull in the pain following the severe pain of the onset, the pulse, however, keeping up.

All the cases made perfect recoveries.

CLASS IV.—Perforation with Localised Peritonitis and Abscess. 22 Cases.

The size of the abscess varied greatly; in some it was extremely small; in several it extended through the whole right side from the liver down, and filled the pelvis. All, however, made good recoveries.

The position of the appendix was in four cases south, over the brim of the pelvis; in all the rest except two, where nothing is said on this point, it was curled up behind or outside the cæcum. The position of the perforation varied too much for generalisation.

Ætiology:

AGES—Up to 10 years.....	1 case
10 to 20 ".....	10 cases
20 to 30 ".....	6 "
30 to 40 ".....	3 "
57 ".....	1 case
65 ".....	1 "

SEX—Males, 20; females, 2.

PREVIOUS ATTACKS—Nine had had none; two, one; two, three; two, five; four, many; and in three the point is not mentioned.

PREVIOUS CONSTIPATION—Chronic constipation was present in five; in three not mentioned; in the rest absent.

PREVIOUS DIARRHŒA absent in all.

CONCRETIONS were present in eight cases.

BACTERIOLOGY—In fifteen the bac. coli was found in pure culture ; in three bac. coli and staphylococcus albus mixed ; in one staphylococci alone ; in one sterile ; in two no report.

Clinical Course—

PAIN—Character at onset was, in 13 cases, crampy ; “ slight ” in seven and “ severe ” in ten.

SITE at onset was “ generalised ” in 11 ; umbilical in one ; right iliac in six ; and in the “ lower zone ” in two ; in two not mentioned.

In practically all cases pain became, before long, localized to the right side, and if slight at first soon became severe ; still later subsiding to a greater or less extent. Following this initial pain, there occurred, according to the histories, in a large proportion of the cases a very distinct exacerbation, such as is often said to indicate perforation.

Distinct exacerbation in 10 cases. (In one of these where there were two perforations, one of the ascending colon, the other of the appendix, there were also two distinct exacerbations).

Indefinite exacerbation in three cases.

Distinctly no exacerbation in four cases.

Not mentioned in two cases.

Pain extremely severe from the onset in three cases.

LOCAL TUMOUR was felt in all but three.

DISTENSION was present in 11 cases, in 9 of which it was local and slight or moderate ; in two moderate and general. In the rest absent.

VOMITING occurred in 16 cases . nausea alone in two ; both absent in the rest.

CONSTIPATION—During attack, found in six cases ; diarrhœa in one ; in the rest absent or not mentioned.

PAINFUL MICTURITION noticed in two cases ; in both the pelvis was filled with pus.

CHILL was found in only three cases ; in one very slight. It was most marked in a case of large and long-standing (three weeks) abscess.

DATE OF OPERATION—Two were operated within 24 hours ; 4 within 48 hours ; 2 within 72 hours ; 11 within 1st week ; 2 within 2nd week ; 1 within 3rd week.

Complications—

FŒCAL FISTULA in two cases ; in one, present at operation, healed spontaneously in eight days ; the other developed a week after operation ; healed spontaneously in three or four days.

HŒMATURIA developed in one case on fifteenth day after operation ; persisted for 15 days ; then disappeared completely. It was in the first specimen only in macroscopic amount ; for the rest of the time microscopic, and was unaccompanied by other symptoms. Remained unexplained.

DOUBLE PHLEBITIS in one case ; first in left leg ; immediately afterwards in right.

NEPHRITIS in three cases.

CLASS V.—General Septic Peritonitis.

During the year ten cases of this condition were admitted and operated. By the term "general" is meant an involvement, as demonstrated at operation, of the whole lower half at least of the abdominal cavity. Of the ten cases nine died, a mortality of 90 p.c. All, except one, were due to an acute perforating appendicitis. The one exception showed an appendix not perforated, but with a hæmorrhagic, greyish mucosa, swollen, and in parts necrotic ; and this was considered to be the cause of the general peritonitis by extension along vessels.

SEX—Males, 7 ; females, 3.

Ætiology :

AGES— 1 to 10 years.....	1 case
10 to 20 "	2 cases
20 to 30 "	3 "
30 to 40 "	2 "
53 "	1 case
57 "	1 "

PREVIOUS ATTACKS—Two had had none ; three, one attack ; two, several slight attacks ; and three, many, of which some had been severe.

PREVIOUS CONSTIPATION—Chronic trouble had been present in two cases ; in two, absent ; and in the rest the point is not mentioned.

PREVIOUS DIARRHŒA—Definitely absent in three ; not mentioned in the rest.

POSITION OF THE APPENDIX—In three cases the appendix pointed south and extended over the brim of the pelvis ; in all the others it was curled up behind, or behind and outside the cæcum.

CHRONIC INDIGESTION, previous to the attack, is mentioned only in one case.

CONCRETIONS were found in seven cases ; in three they were absent.

ORGANISMS—Cultures taken at operation yielded, in eight cases, a pure growth of *B. coli com.* ; in one case a mixed growth of *staphylococcus aureus* and *B. coli com.* ; and in one case they remained sterile.

Clinical Course and Signs—

ONSET—In six cases the pain was slight at the onset, becoming severe later ; in the other four it was severe from the first.

In eight cases the pain was generalised at first ; and in two it began in the hypogastric region. Following this, it became localised to the right iliac region in four cases, and remained general in four.

In all cases there was generalised tenderness to pressure over lower half, or more, of the abdomen, but in a majority of cases this was worst in the right iliac region.

There was considerable resistance to palpation all over the abdomen in three cases ; in the rest there was absolute rigidity.

RESTLESSNESS was marked in four of the cases.

TUMOUR was made out only in two cases ; in one of these from the rectum ; in the rest, rigidity prevented proper palpation.

DISTENSION, generalised, was present in nine, and absent in one.

VOMITING was present in all cases, and in a majority was marked.

CONSTIPATION during the attack was present in four cases ; in four it was definitely absent ; in two, not mentioned.

DIARRHOEA during the attack was not present in any case.

COSTAL RESPIRATION was noted in six cases ; not mentioned in four.

URINARY DISTURBANCE was found in two cases ; in one retention, previous to operation ; in the other, albuminuria with casts, and considerable frequency.

CHILL was rare ; it was noted only in two cases.

CATHARTICS—There is a history of the exhibition of cathartics in eight cases. In one case an exacerbation of symptoms and probable perforation followed a saline purge. In the others no definite connection could be traced between the cathartic and perforation. In some, certainly, the cathartic was given after perforation had occurred.

LAPSE OF TIME BETWEEN ONSET AND OPERATION—In one case, 26 hours ; in two cases, 24 to 48 hours ; in two cases, 48 to 72 hours ; in two cases, on 4th day ; in one case, on 6th day ; in one case, on 7th day ; in one case, on 16th day.

In the one case that recovered 72 hours had elapsed since onset.

In six cases the perforation may be said to have been primary from the appendix ; in two it was probably secondary from a pre-existing abscess ; and in two the point is doubtful.

The peritonitis in all cases but one was of the sero-purulent form ; in one case it was of a plastic character, with more or less delimited collections of thick greenish pus here and there between the coils of bowel.

TIME OF DEATH—One case was moribund before operation, and died on leaving the table. One died ten hours after operation ; one 50 hours ; two 68 hours ; one 72 hours ; one 88 hours ; one 96 hours, and one 106 hours after operation.

COMPLICATIONS—None, except nephritis in one case.

In conclusion, I wish to express my thanks to Dr. Bell and Dr. Garrow, in whose services the above cases occurred, for their kind permission to make use of this material ; to Dr. Bell also for advice and assistance in the preparation of the report. And I would further express my indebtedness to Dr. Keenan and Roy, by whom a majority of the case reports were compiled, and to Drs. Bradley and Brown to whom I owe the pathological data.

ON THE ÆTIOLOGY OF THE NAUSEA AND VOMITING OF PREGNANCY.*

BY

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The purpose of this preliminary paper is to advance a theory, which seems to be founded on sound physiological grounds, of the causation of the nausea and vomiting of pregnancy.

In a brief review of the somewhat copious recent literature of the subject I have been unable to find anything which leads me to think that the theory which I wish to advance is other than new.

The vomiting of pregnancy is usually divided into two classes, namely: the mild or physiological; and the severe or pathological, hyperemesis gravidarum. The mild form, with which this paper particularly has to deal, occurs in the vast majority of cases of pregnancy.

In a brief paper it is impossible to refer to the various theories which have been advanced from time to time in explanation of the origin of this vomiting of pregnancy. That there exists in the pregnant woman a condition of exaltation of nervous tension all are agreed. A few consider that the origin lies in direct irritation of the medullary centres by toxic material circulating in the maternal blood. Others explain the irritation as originating peripherally, either in uterine contractions or in abnormal states of the gastro-enteric tract.

Exactly how conditions about the uterus give rise to peripheral irritation has been variously explained. Mechanical pressure of the enlarging uterus on the nerves of the pelvic ganglion; stretching of the muscle fibres of the uterus causing pressure on the nerves; versions and flexions of the pregnant organ; ovarian irritation from uterine pressure; diseased conditions, as endometritis, cellulitis, endocervicitis, etc., have all been advanced as factors in the production of this irritation. Gastric ulcer, gastritis and various abnormal conditions of the large and small bowel have also been advanced as possible sources of the peripheral irritation.

Dirmoser,¹ as the result of a careful examination of the urine in six cases of hyperemesis gravidarum, comes to the conclusion that intoxication is the cause of the severe symptoms. As to the production of the intoxication,¹ he advances the following elaborate hypothesis:

*. Read before the Montreal Medico-Chirurgical Society, Nov. 10, 1898.

“Through the increase in size of the uterus the motor nerves of that organ, the sympathetic and the vagus, are at once mechanically irritated. They, being irritated, bring about respectively contractions of the uterus and of the stomach. Irritation of the vagus increases, however, the secretion of the gastric juice, and also the mucous production, so that the alkaline mucus frequently neutralizes the gastric juice, which is often observed in cases of hyperemesis. These changes form a predisposition to the formation of toxins, which is still more increased by the atony of the whole intestinal tract, which is present in all severe cases.” Dirmsor thus considers that the uterine contractions are the result of irritation due to mechanical pressure of the enlarged uterus upon the motor nerves of that organ, and that the contractions so produced are evidently pathological.

I cannot do better than quote verbatim the summary of the present views as to the explanation of vomitus gravidarum which is given in *Progressive Medicine* for September, 1899.²

“The possible ways of explaining vomitus gravidarum are: (a) Direct vomiting may be produced by an abnormal condition of the vomiting centre, due either to the irritating effects of chemical substances, toxins, etc., circulating in the blood, or to nutritional changes caused by variations in blood pressure in the medulla, or to other circulatory changes. (b) Reflex vomiting may be produced by sufficiently powerful impulses sent from the genital tract, causing an irritation of the vomiting centre. (c) Vomiting may be produced by a combination of influences affecting the vomiting centre both directly and reflexly. (d) The psychopathical factor may be important, as in the vomiting of hysteria.

“We must assume that in two-thirds of all cases of pregnancy there exists an increased irritability of the medullary centre, due wholly or in part to one or both of these two factors: (a) Nutritional changes resulting from circulatory disturbances; (b) poisoning from toxic elements circulating in the blood. We must further assume that this abnormally irritable vomiting centre is acted upon by afferent impulses sent from one or more of a variety of peripheral sources. Among the most important causes of reflex irritation are an incarcerated retroflexed uterus, abnormal adhesions of the uterus, pathological changes in the uterine wall resulting from endometritis, pelvic congestion, constipation, gastritis, etc. To these sources of afferent impulses we must add the psychopathical or hysterical condition, which is of especial importance in the more serious cases.”

A brief consideration at this point of some of the more important conditions which are present in the gravid uterus will make my further remarks more intelligible. Tarnier has said, “All the properties of the

gravid uterus exist in a rudimentary state in the nulliparous woman, and gestation only exalts them." Pajot has expressed this by saying, "Pregnancy does not create any new properties."

The principal properties possessed by the uterus are, sensibility, irritability, and contractility.

The *sensitiveness* of the non-gravid organ to pressure is easily demonstrated in making the bimanual examination. Pain is frequently complained of when the uterine sound is inserted. That this sensitiveness is increased in pregnancy is apparent to any one who has practised abdominal palpitation for diagnosis of the foetal position. The manual pressure exerted in expressing the placenta frequently gives rise to severe pain. Women occasionally complain of uterine tenderness, especially those cases where the liquor amnii is deficient and the foetus exerts direct pressure on the uterine wall.

The *irritability* of the uterus is frequently markedly increased as the result of pregnancy. This fact is well known even to the laity, who not infrequently make use of their knowledge to induce abortion by introducing foreign bodies into the vagina to set up powerful uterine contractions.

The *contractility* of the uterus is its most important property. Tarnier and Chantreuil³ state that the uterus possesses the power of contracting even in a state of vacuity, citing by way of example that it may be noted in certain women at the period of menstruation, especially in cases of dysmenorrhœa. It favors the expulsion of clots and débris and is probably the origin of the severe cramp-like pains so often complained of by women at these periods. They state very strongly that these contractions of the uterus occur at regular intervals throughout the whole period of pregnancy.

Hirst,⁴ Davis and others also draw attention to the fact that uterine contractions occur regularly throughout the whole period of pregnancy, and Hirst states that during pregnancy the contractility is always most marked at the menstrual epoch, hence the frequency of abortion at these times. After the fourth month these uterine contractions are manifest in placing the hand upon the abdomen over the fundus. The uterus can be felt hardening under the hand. In the earlier months these contractions can easily be made out by the bimanual method, and are frequently made use of in diagnosing the fact of pregnancy when the uterus is found to be enlarged.

Contractility is more markedly developed in the muscle cells of the body of the uterus, particularly towards the fundus, while it is less pronounced in the cervix. The cervix seems to be in a state of tonic spasm, while the contractions of the uterus are clonic. That this contractility of the uterus is independent of the will and yet capable of be-

ing affected by the emotions, all are aware. Uterine contractions may be set up reflexly by irritation of the breasts, and particularly of the nipples. It is probable that any powerful cutaneous irritation, as the application of heat and cold, may act in the same way.

The nerve-supply of the uterus is derived chiefly from the hypogastric and ovarian plexuses of the sympathetic system. Cohnstein⁶ has shown that the uterine ganglia have to a certain extent an independent action, like the cardiac ganglia. There exists, as has been proven repeatedly, a centre in the medulla oblongata which presides over the uterine contraction. Thus the uterus is provided with a nerve apparatus to preside over contraction, very similar to that of the heart.

That uterine contractions occur at more or less regular intervals throughout gestation may then be taken as proven. The question then arises, What is the purpose of these painless rhythmical contractions of the uterus?

It is very probable that by these contractions the uterine circulation is accelerated, and thus the uterus supplements to a certain extent the action of the heart throughout pregnancy. In considering the circulation of the blood in the gravid uterus the thing that probably attracts particular attention is the arrangement of the venous system. The veins, especially in the middle coat of the muscular uterine walls, are simply enormous sinuses whose inner coat alone remains, being in direct contact with the muscle-cells. Thus these uterine veins are converted into large contractile sinuses, in which, no doubt, there must occur considerable retardation of the blood flow.

If I may be permitted, I would for the purpose of illustration compare the gravid uterus to a sponge held in the hand under a flowing faucet. As the sponge becomes filled and distended with water the hand is contracted upon it, and so the sponge is squeezed and emptied more or less of the water it contains according to the force exerted by the hand in squeezing it. When the hand is relaxed, the sponge again fills up, and so on. This, I take it, is very much what takes place in the gravid uterus.

The development of the embryo and its envelopes, as well as the hyperplasia of the uterus and its lining, are accompanied with tremendous chemical changes. It is certainly from the venous sinuses of the placental site that the embryo derives its chief nourishment, and into which its effete material is emptied. The ordinary circulation of the blood through the sinuses to a certain extent provides for change in the supply, but owing to the retardation of the blood-current from the dilatation of these sinuses there must be a certain residuum, which, as

it becomes surcharged with effete material, probably acts in some way as an irritant and stimulates the uterus to contraction and thus to a certain degree the organ may be said to empty itself.

In studying two cases of pregnancy with vomiting which I have attended recently, my attention was arrested by certain phenomena which seemed to me to be explicable only on one hypothesis.

In the first of these cases, a primipara, æt. 40, nausea and salivation occurred throughout the whole period of gestation. At intervals the vomiting was extremely severe, at one period the prostration resulting was so intense as to make it seem probable that the pregnancy would have to be terminated by the induction of abortion. I noticed that the severer attacks of vomiting occurred at certain intervals, which, on questioning the patient, I found corresponded to the menstrual epoch. On one occasion I precipitated a severe attack of vomiting when examining the breasts; on another a vaginal examination produced the same result, though on both occasions the patient had been fairly well for several days previous.

In the second case, also a primipara, the patient complained that her breasts were excessively tender, particularly the left, and on my examining this breast the patient was seized with a severe attack of vomiting. A vaginal examination produced the same result. The uterus was found to be unusually sensitive, and the left ovary was very tender. This patient had previously suffered from dysmenorrhœa, the pain being chiefly located in the left side. While talking with this patient I noticed that the nausea occurred in paroxysms, separated by a considerable interval, in which she said she felt perfectly comfortable. The patient, as long as she was kept quiet, either on a lounge or in bed, rarely vomited, though she still suffered from paroxysms of nausea. She noticed that after walking about the paroxysms occurred more frequently, and very often terminating in retching.

The hypothesis which to my mind affords the best explanation of the phenomena observed in the two cases mentioned is that rhythmical uterine contractions were the primary cause of the reflex irritation which resulted in paroxysmal nausea and vomiting.

In the first case, where the attacks of vomiting were more marked during the menstrual epochs, the uterine contractions were probably accentuated, and at the same time the general nervous tension was exalted, hence the increased severity of the symptoms at these periods. My examinations in both cases acted by increasing the uterine contractions and thus precipitated the paroxysms.

The theory which I wish to advance is that the essential exciting

cause of the nausea and vomiting of pregnancy is frequently the physiological contraction of the muscular fibres of the gravid uterus.

The contractions of the non-gravid uterus which follow the introduction of the uterine sound not infrequently result in reflexly inducing nausea and vomiting. Intra-uterine applications are frequently followed by cramp-like pains, which are associated with nausea and vomiting. In dysmenorrhœa nausea and vomiting sometimes occur, the explanation being that the effort of the uterus to expel clots and débris reflexly irritates the vomiting centre in the medulla. Giles⁷ has noted that in the primipara there is a close and constant connection between the sickness of pregnancy and previous dysmenorrhœa. Vomiting is frequently noted in the first stage of labor, and usually occurs at the acme of uterine contraction.

The over-distended bladder, in its effort to contract, not infrequently reflexly induces nausea; similarly the stomach sets up the same reflex. In ileus an analogous reflex action occurs. Appendicular colic is frequently associated with nausea and vomiting.

Thus we see that any hollow viscus in contracting may set up reflex nausea and vomiting.

The fact that the paroxysms of nausea occur most frequently on first assuming the erect position in the morning has led the laity to apply the term "morning sickness" to this condition. It has also been noted that if the patient, before rising, partakes of a light breakfast, the sickness is not so apt to occur.

"Morning sickness" is, I think, susceptible of explanation: There is probably more or less of an accumulation of effete material in the maternal blood in the morning, which leads to increased irritability of the nervous centres. The effect of assuming an erect position is to bring about a determination of blood to the pelvis. This engorgement of the pelvic circulation probably leads to more energetic uterine contraction, which, acting reflexly upon the centre, produces nausea and vomiting. When food is taken before rising it is probable that considerable blood is determined to the stomach, hence less will find its way to the pelvis when the patient stands erect, so that the uterine contractions are apt to be less vigorous than when the patient rises fasting.

It is probable that the beneficial effects of nerve-sedatives in the treatment of this distressing condition are obtained not so much by inhibiting the uterine contractions as by soothing the irritable nervous system and thus controlling the reflex.

I would summarize my conclusions as follows :

1. There exists more or less of a rhythm in the paroxysms of nausea and vomiting in pregnancy.

2. There must also exist a rhythmical exciting cause for these paroxysms.

3. There is a rhythm in the contractions of the uterus which occur throughout pregnancy.

4. The essential exciting cause of the paroxysms of nausea and vomiting of pregnancy, is frequently the physiological contraction of the muscular fibres of the uterus.

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CLINICAL NOTES.

BY

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A Case of Gonorrhœa Rendered Fatal by its Sequelæ.

Upon January 7th, 1892, I was called to treat W. A., a farmer, aged 65 years. The patient was a short, corpulent man with rosaceous nose and cheeks. For years he had been addicted to periodical sprees and promiscuous sexual intercourse. About three weeks before my visit he had been quite disturbed with irritability of the bladder. This irritability had occasioned frequent passages of urine rich in brisk dust deposits. Retention of urine finally developed and for the week preceding my visit the catheter had been used twice daily for the patient's relief. It was noted on January 5th, that the right testicle and epididymis had become swollen and hard.

January 7th. The patient is suffering from severe vesical and testicular pains. His pulse is 100, and temperature registers 102° F. The heart and lungs are normal; the radial arteries are hard but not atheromatous. Palpation of the abdomen reveals only tenderness localized slightly above the pubic symphysis. The scrotum upon the right side is reddened and œdematous, and at its central part is adherent to the anterior face of the enclosed testicle. Fluctuation within the scrotum is not evident. The epididymis is much hardened and enlarged. The same characters of hardness and enlargement can be traced along the lower two-thirds of the anterior face and outer border of the right testicle.

The urine withdrawn by catheter is alkaline in reaction, possesses an ammoniacal odour, and contains deposits of ammonio-magnesium phosphates, pus, and thick mucus. By firmly passing my finger along the under surface of the penis I expressed nearly half a teaspoonful of creamy pus from the meatus.

Treatment.—Catheterization of the bladder night and morning followed by irrigation of the bladder and urethra with a solution of boric acid, 80 grains to the ounce. Internal administration of boric acid, 5 grains, in copious draughts of water every three hours, and sulphate of quinine, 3 grains, and whiskey, $\frac{1}{2}$ ounce three times a day; thorough purgation and a milk diet.

January 9th. General condition unchanged. Urine freer of pus and mucus, but still not clear. Pus not so plentifully squeezed from the urethra. Scrotal œdema over the affected testicle more developed than upon the 7th instant.

An incision was made through the scrotum into the anterior face of the right testicle; this resulted in the liberation of a teaspoonful of thick pus. The pus had destroyed the internal structure of the testicle. The epididymis is intact but much enlarged and hardened. The abscess cavity was packed with iodoform gauze after thorough cleansing with solution of hydrogen peroxide; entire scrotum dressed with sterilized gauze and cotton. General treatment continued unchanged.

January 11th and 12th. Conditions unchanged. Testicular wound dressed, pus cheesy.

January 13th. Patient to-day experiences severe pains running from the hypogastric region upwards and backwards to the lumbar region of either side. The urine is quite thick with pus and mucus and gives off a nearly fetid odour; its quantity is lessened. Temperature 103°F ., pulse 120, with lowered tension and diminished volume. The patient is drowsy and complains of headache. It is evident that a double pyelitis has been established within the past twenty-four hours and that uræmia is developing. Brisk purgation with continuation of the boric acid was kept up with the addition of ten minims of the tincture of digitalis every two hours and systematic catheterization and irrigation.

January 14th. Patient became comatose during the night. He lies with contracted pupils and fallen jaw and breathes rhythmically and deeply. The urine contains rather more albumin than the amount of pus contained in it would account for.

The uræmic stupor lasted five days during which it was only possible to apply the hot pack night and morning, to administer digitalis and water in small amounts at frequent intervals, and to systematically catheterize and irrigate.

January 19th. The patient was gradually awakened from his deep stupor; he is now quite conscious. The urine has increased in quantity and is free from pus and mucus; its fetid odour has disappeared.

From January 19th to January 26th, the patient progressed well. His mind was clear, he experienced a keen appetite, passed his urine without aid and felt hopeful of recovery.

January 26th. Patient complains of severe pains in ankle, elbow, and finger joints of both sides. All these painful joints are red and swollen. The temperature, which during the past few days has been normal, has risen to 103°F ., and the mitral valve, heretofore normal, is insufficient. Along the left border of the sternum, above, below, and over the fourth rib, a pericardial friction murmur is heard.

Sodium salicylate and potassium bicarbonate were given alternately every three hours and tincture of iron chloride three times a day.

At the end of twelve days the polyarthritides and pericardial friction murmur had subsided, but the physical signs of mitral insufficiency and

moderate dilatation of the left heart remained. The affected joints were quite swollen and stiff. In both knee joints a moderate effusion was, I am sure, present for nearly a week after the disappearance of the acute symptoms.

February 15th. A daily examination of the lungs has revealed no unnatural change, except lessened intensity of respiratory sounds, till to-day. Now there is present consolidation of the bases of both lungs, a condition evidenced from the spinal column to the posterior axillary line of either side.

February 16th. Two small areas of pulmonary solidification detected in mid-axillary region of either side; other physical signs not changed.

February 18th. Patient is dyspnoic. Physical signs of chest unchanged, except the development of flat percussion, noted in five limited areas, two below the right scapula, one below the left scapula and one in either mid-axillary region.

February 19th. Circumscribed areas giving flat percussion note aspirated to-day. Each area contributed a tablespoonful of straw-coloured serum flaked with small shreds of fibrin. Dyspnoea relieved by operation.

The patient gradually improved until April, 1892, when his legs became œdematous and his heart presented increased enlargement to the left. The mitral regurgitant murmur was intensified.

These conditions were treated upon well advocated principles, but it was not until the following June that the patient with swollen legs and palpitating heart was able to walk about. By the last of the next July he felt so much better that he was able to drive a horse-rake, but in the middle of August, dyspnoea and palpitation became most intense.

I visited him on August 26th. He sat in a chair with his hands pressed to his temples and continually exclaimed, "My head! Oh! the pain." I was positive from symptoms of pain under such circumstances as related to the patient, that either an embolus or detached vegetation from the mitral valve had lodged in the middle cerebral artery, but there was no objective sign of lesion, such as unequal pupils or paralytic state, to support this view. Morphine relieved the pain.

Upon September 1st, the patient experienced another attack of severe pain, then he lost consciousness and died on September 2nd. I did not see him during the last attack.

The following propositions support my belief as to the gonorrhœal nature of the case.

(1) The evident presence of pus in the urethra, as shown by the readiness with which it could be squeezed away by pressure upon the under surface of the penis.

(2) The probability of the first days of irritability of the bladder be-

ing occupied in the development of the initial stage of a specific urethritis.

(3) The time at which the orchitic developments took place.

(4) The arthritic and cardiac phenomena.

(5) The patient's known intimacy with his servant girl, who had been treated for gonorrhoea a few weeks before the onset of the patient's urethral and vesical symptoms.

The case is important for two reasons. First, it unfolds a most interesting system of regular morbid developments; second, it illustrates the dangerous characters a clap may assume.

Note.—One year after treating the foregoing case I visited a gentleman who had been taken ill three days before my arrival. He had been seized with chills, severe pains in the chest and a general aching of the body. At the time of my visit the patient complained of pain situated half an inch to the left of the nipple. The pain, although sharp and stitch-like, was continuous. It was rendered most acute by deep inspiration. The temperature registered 104° F. The patient was at times markedly delirious.

Auscultation over the point of pain revealed a to-and-fro friction murmur that was continuous when the patient ceased breathing and slightly intensified by a quite deep respiration. In making a general examination of the case I observed that the patient's penis was carefully wrapped in cotton, and then learned that he was in the purulent stage of an acute clap. I also ascertained that four days before the onset of the chest symptoms (pleuro-pericarditis) he had been catheterized.

It is now six years since this patient was afflicted with his pleuro-pericarditis, but his medical attendant tells me that to this day the patient complains of frequent stitch pains in the region of the left nipple and that his left knee joint is partially ankylosed. In all cases of acute pleuritis or acute pericarditis it might be well to investigate the condition of the urethra or vagina.

A Case of Death during Chloroform Anæsthesia.

G. A. B., aged 47 years, had been the subject of chronic hip disease for 43 years. When four years old he fell from a fence and, he told me, dislocated the head of his right thigh-bone upwards and backwards upon the corresponding ilium. He further stated that no reduction of the dislocation was made and that he suffered during many years of invalidism. Finally, fixation of the head of the thigh-bone in its abnormal position developed, and, till within one year of his death, he had experienced no inconvenience save that arising from lameness and occasional pain in the region of the displaced femoral head.

In March, 1890, intense pain in the head of the femur and œdema in

the tissues surrounding it, occurred. The patient refused an operation for his relief in May, and did not consent to be surgically treated until the succeeding May. At that time he was much reduced in flesh, his blood was thin, and he was extremely weak. Fluctuation was marked over the whole outer face of the right ilium. The operation it was intended to make included only incision and drainage to let away accumulated pus.

The patient was given a preliminary drink of strong brandy. He was then placed upon a level table with his head and neck slightly elevated. The inhaler consisted of a very fine cambric handkerchief and the anæsthetic—chloroform—was dropped upon it from an air-displacing glass bottle. The method of giving the chloroform I aimed at was this: drop by drop, until a moderate cumulative effect was obtained. But during the stage marked ii. I at one time permitted half a teaspoonful to fall upon the handkerchief.

Symptoms pertaining to chloroform anæsthesia in this case.

(i) The patient eagerly inhaled the chloroform vapour for a few seconds and proclaimed himself anxious to be relieved of all pain. The pulse assumed slightly greater volume and tension and slowed from 110 to 80. After two to four minutes the respirations became rapid and to a slight extent stertorous. The anæsthetic was then withdrawn and partial consciousness almost immediately returned.

(ii) During the short period of unconsciousness the operator found it impossible to drive his bistoury through the soddened tissues; a more liberal dropping of chloroform was then made and anæsthesia became quickly profound. The pulse showed excellent characteristics in volume, tension and rhythm. Withdrawing the handkerchief from before the patient's face, I turned to assist the operator. Suddenly the respirations became deep, stertorous and rapid, and then ceased.

I examined the right radial artery and observed the pulse beating more rapidly than it had been and with greatly lessened volume. Presently it stopped. The usual methods of resuscitation were employed for a considerable time, but they were without effect. The patient was dead.

Tuberculous Osteo-Myelitis of Terminal Phalanx of Index Finger Succeeded by Tuberculous Invasion of the Lungs.

Lizzie C., aged 23 years, a moderately plump girl, five feet eight inches in height, consulted me in March, 1890, for the relief of a felon involving the terminal phalanx of the left index finger. The tissues of the end of the finger were infiltrated and œdematous, reddened towards the hand and pale and dead-looking towards the extremity. Anteriorly, on the palmar surface of the pulp, there existed a perforation of the

tissues round which masses of cord-like material protruded from within the finger, and from which pus and remnants of broken-down tissues constantly passed away. By means of the probe it was ascertained that only a thin shell of bone consisting of the dorsum of the phalanx remained. I amputated the finger above the terminal joint and healing was uninterrupted.

During the succeeding four months the patient became much debilitated; she lost appetite and flesh. In August she was prostrated by an attack of bronchitis involving the tubes, large, medium-sized and small, over all regions of the chest. No consolidation existed in the lungs, but the patient was markedly cyanosed. Her pulse was not unduly rapid and her temperature throughout the course of the disease never exceeded 103°F. She was considerably emaciated and expectorated pus. Microscopical examination of her stained sputa revealed the presence of tubercle bacilli, in number three to each mounting, with giant cells, epithelial cells and small round cells. The patient recovered from the acute symptoms in three weeks, and in 1893, weighed 154 pounds.

The cause of the osteo-myelitis was given as trauma. In September, 1899, the patient's sister died of pulmonary phthisis that exhibited its first signs of development in the preceding February.

A Case of Fatal Hæmatemesis.

Upon the morning of January 8, 1894, I visited J. B., a short slender boy, fifteen years of age. For a week the patient had been ill of fever, a sense of profound weakness and pains involving the muscles of his shoulders, arms, thighs and legs. The urine was voided in quantities of one ounce every six hours and contained a dense deposit of uric acid and urates equal in bulk to twenty-five per cent. of the urine. It was observed after solution of the urates by heat that an opaque urine remained which was cleared by the addition of one drop of strong nitric acid. The patient lay easily upon his bed and turned from side to side without pain. He was slightly anæmic and his flesh somewhat reduced. The heart and lungs were normal, anæmia being expressed by a blowing murmur, systolic in time and low in pitch, heard over the base of the heart. Pulse 90, weak; temperature, 101°F.

Symptoms.—An occasional light pain occurred in the epigastric region from time to time and subsided after a few minutes. The bowels had already freely responded to the action of Epsom salts. The passage of urine was succeeded by urethral burning. The tongue was firmly protruded and was moist. Over its dorsum existed a whitish coating stained green in patches.

The abdomen was tympanitic to the degree usually associated with the loss of food supply induced by anorexia. This sign revealed nothing

distinctive of internal lesion. The skin of the arms and legs presented a few markings in bluish green and yellowish green,—markings suggestive of purpura.

The patient was given potassium bicarbonate (gr. v., in half a glass of water every two hours), a tablespoonful of milk every two hours, and lemonade freely.

January 9th, 9 a.m. Temperature, 99°F., pulse very weak. Large firm coagulæ of milk have been vomited several times. Their formation may be attributable to the lemonade drunk during the past night. The urinary output has increased to double the quantity voided yesterday. Treatment unchanged, except withdrawal of lemonade.

7 p.m. Sudden severe abdominal pain and pain referred to the glans penis associated with temporary urinary retention, developed one hour ago. One half hour later large quantities of coagulated and liquid blood were vomited.

8 p.m. The abdominal muscles are rigid and tympanites is fast developing.

9.30 p.m. The pulse grows fainter, the lips are becoming pale and the breath is short and quick. Mouthfuls of blood are spat up at intervals of but a few minutes. The hæmorrhage progressed until a fatal termination was reached at 5 a.m., January 10th. The amount of blood vomited measured one quart.

This case probably illustrates perforation of a gastric ulcer whose presence I failed to recognize. The rapid growth of the abdominal symptoms points to the occurrence of an acute peritonitis. After the death of the patient I was told that he had been subject for the past six months to periodical attacks of sick stomach and one-sided headaches that were usually completely relieved by the administration of Epsom salts.

A CASE OF RUPTURE OF THE RECTUM; OPERATION; RECOVERY.

BY

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The case which I wish to bring before you to-night is, I think, sufficiently unusual to be worthy of record. The history is as follows:—

G. S., a rather delicate little girl, aged twelve years, living in the country (nine miles from a railway station and seventy miles from Montreal), while skipping and jumping fell off a piano box upon a broom-handle which happened to be leaning against the box. The end of the handle entered the anus and penetrated the body to the extent of from twelve to fifteen inches. The child succeeded with some difficulty in withdrawing the broom and made her way to the house near by. Dr. Yeats, of Dunham, whom I have to thank for the case, saw the patient about three or four hours after the accident. He noted that there was at that time some shock and pain, but not external evidence of hæmorrhage. A few hours later, however, a large quantity of blood escaped from the rectum accompanied by marked signs of weakness. Dr. Cotton, of Cowansville, was called in consultation and it was decided to send the patient into town.

I first saw the case at the station on arrival of the train, 26 hours after the accident. Her condition was most unpromising. The face blanched and pinched; extremities cold; pulse small, weak and rapid; temperature 101°F. There was also general abdominal tenderness with fixation of the abdominal muscles, but there was no distention. There had been pain, though not of a severe character, and some vomiting; much loss of blood also was said to have occurred during the journey to town. The patient was transferred to the Western Hospital and without further delay anaesthetised.

On inspection the anus was found bruised and patulous and the surrounding skin ecchymosed. On digital examination (per anum) a large rent was discovered in the rectum situated about three inches from the anal orifice and through this opening the finger readily passed into the peritoneal cavity. The rectum, which was filled with fluid and clotted blood, was emptied and cleansed and the edges of the torn bowel were seized with dressing forceps and a spouting vessel caught and ligated. After temporarily packing the rent with iodoform gauze the patient was placed in the Trendelenburg position and the abdomen opened by the usual median incision. A considerable quantity of

* Read before the Montreal Medico-Chirurgical Society, Nov. 11, 1899.

grumous material found among the coils of small intestine and in the pelvis was sponged away. Undoubted evidence of a commencing peritonitis was to be seen. A couple of loops of intestine presented a bruised appearance and were covered with a sloughy looking exudate. The rectal tear was easily located by means of the projecting gauze. It was situated low in the pelvis, behind and somewhat to the left of the uterus, and measured from $1\frac{1}{2}$ to 2 inches in length. To close it two rows of sutures were used; the first row consisted of one continuous suture; the second of a number of mattress Lembert sutures. Before closing the abdominal wound the pelvic cavity and exposed coils of small intestine were carefully sponged with 1 to 10,000 bichloride solution and a glass drainage tube inserted.

During the operation the patient's condition was exceedingly grave, necessitating hypodermics of brandy and strychnine and subcutaneous infiltration of normal salt solution, of which a pint was introduced beneath the breasts and below the axillæ. After the operation the patient was kept for two hours on the table in the Trendelenburg position surrounded by blankets and hot water bottles. The pulse, though very small and rapid, was still perceptible. For three days, stimulants, heart tonics and nutrient enemata were persistently employed. The pulse remained rapid and small for some time. At 4 p.m. on the second day the temperature rose to $101.3-5^{\circ}\text{F.}$, but fell to 98.5° on the following day and subsequently remained practically normal. On the fourth day the drainage tube was removed and gauze packing was then used. Pus escaped for some time, gradually lessening until the sinus closed five weeks after operation. Convalescence, owing to the patient's greatly lowered condition, was necessarily slow; nevertheless it was uninterrupted and recovery was complete. The bowels acted regularly from the first; the rectum received no local treatment but beta-naphthol was administered for a time as an intestinal antiseptic.

Remarks: Erichsen in his valuable work on "The Science and Art of Surgery," Vol. I., page 840, says: "When a foreign body such as a stick or a broom-handle or the leg of a chair is thrust forcibly up the rectum by a person falling on it, two dangers may result—external laceration of the sphincter ani and the perineum with hæmorrhage, or transfixion of the gut and wound of the periteum with consecutive inflammation of that membrane, which almost invariably terminates fatally." He further cites a remarkable case which occurred in his own practice where a cedar pencil five inches long and cut to a point was forced by the patient, a young woman, through the posterior wall of the vagina into the abdominal cavity. Here it transfixed two coils of small intestine, and after being fixed there for eight months Erichsen extracted it by an incision through the anterior abdominal wall, midway between the umbilicus and Poupert's ligament, where its point was engaged in the fascia transversalis. It had occasioned repeated attacks of peritonitis, and after extraction death resulted from that cause.

MEDICO-LEGAL CASES.

BY

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Offense against Morals, Allegations of Irresponsibility on Account of Insanity and Epilepsy set as a Defence, Disproved by Medical Examination; Condemnation.

Last May I received instructions from the Police Magistrate to make an examination of the mental condition of H. C., confectioner, a Belgian by birth, accused of having publicly offered for sale three images tending to corrupt morals and contained in a box. This offence comes under Article 179 of the Criminal Code, which renders the guilty party liable to two years imprisonment. These images, of an obscene nature by reason of the predominance given the genital organs, were made of colored candy and presented a naked woman and a naked man with a dog. A picture of the Infant Jesus, carrying a cross, was pasted on the box. The trial disclosed the circumstances under which the offence had been committed. The defendant had brought this box to a hotel-keeper, telling him to deliver it to a man named S. who lived in the house and to claim the sum of twenty-five cents, the price agreed upon for the box, and that he, himself, would come afterwards to collect it. The hotel-keeper opened the box, which was not wrapped up. On seeing its contents, whose intentional obscene character was only too apparent, he caused a police official to be called, to whom he gave a description of H. C. This officer went to his residence and entered into a conversation with him, under the pretence of procuring a similar box for himself. H. C. hesitated at first, alleging that this kind of business was very dangerous in this country on account of the severity of the laws; that it was not the same in his country where he had only to make similar boxes to make money for himself when he needed any. He finally consented to make the same kind of a box, for a stipulated price. Thereupon, the officer placed him under arrest and brought him before the magistrate. H. C. was identified by the hotel-keeper as the individual who had delivered the box to him.

At the trial H. C. pretended that he remembered nothing and protested his innocence. His brother asserted that some of the family had been insane and that the defendant himself was not always in his proper senses and his wife stated that he had sometimes lost conscious-

ness, and she seemed to wish to attribute to epilepsy the offence of which her husband was accused. In the presence of these allegations, the defendant was, at the request of the consul of his country, granted a medical examination.

In the present case, we have then to ask ourselves the following questions :—

(1) Could the defendant in a general way be considered insane ?

(2) Was he afflicted with epilepsy and, if so, was it while under the influence of this nervous disorder that he had committed the act for which he was called to account ?

We have sought the answer to these two questions in a personal examination of the accused and in a study of his history and hereditary antecedents. We obtained the latter from the accused himself and from his brother, and, although it has not been possible for us to test the correctness of their information on account of the great distance, still we think that it may be accepted as true.

H. C. has been living in this country for three years; he is a fancy pastry maker by occupation, forty-two years of age, twenty years married, and the father of two children aged respectively 10 and 17 years.

His father, an army officer, was a hard drinker and died suddenly. His mother died of pulmonary phthisis. One of his sisters has been an inmate of an asylum for fourteen years. She became insane in consequence of family troubles. Another sister is of a highly nervous temperament. She has had some nervous attacks, the nature of which it is impossible to determine with precision from lack of sufficient details. The brother, whom we saw, is perfectly sound, intelligent, and enjoys an excellent reputation.

H. C. has irregular features, is of medium height, and not over vigorous. He does not indulge in strong drinks immoderately. H. C. presents nothing out of the ordinary in his appearance and his bearing, but his countenance was visibly embarrassed when he appeared in our presence. His conversation is coherent and rational; he understands the meaning of all the questions and answers them correctly. His memory is generally good. The exactness of the information communicated by him with regard to his family and himself was corroborated by the narrative which his wife and his brother subsequently gave us. He declared most earnestly that he was not accountable. He seemed to understand the benefit to be derived from his hereditary antecedents, of his having at times lost consciousness, and he set forth the importance thereof with a certain degree of cleverness. In the course of the visits which we paid him in the Montreal jail, we discovered in him neither excitement nor depression, neither delusions nor hallucination, in a word, no mental disorder, whatsoever, and it does not appear from

the examination to which we subjected him that he ever had had any.

In our presence H. C. maintained the same attitude that he took before the tribunal, that is to say, that he remembered nothing. But it was comparatively easy, by questions put unawares in the course of the examination with regard to the various phases of the offence, to obtain from him answers, which, taken together, made a narrative in every respect agreeing with the facts related at the preliminary examination. He even acknowledged to us that he had made the box at the request of S. and that it was not the first he had made for him. We may, as a consequence affirm that the amnesia of H. C. was feigned. Our inquiries on the subject of his insanity have then ended in the negative. We discovered in H. C. no symptoms which could warrant us in assuming that he is afflicted with insanity. His intelligence is sufficiently developed and is in no wise perverted. I questioned his wife and his brother; they reported of him no act nor sign of insanity. His wife said that his manner of living had been regular and his sexual life normal. His brother asserted that he was obstinate, vain and proud. These, however, are anomalies of character which cannot be compared to symptoms of lunacy. In answer, therefore, to the first question, we may assert that H. C. cannot be considered a lunatic, that he is sufficiently intelligent to appreciate the nature of his acts and that he is in the free exercise of his will.

It remains for us now to elucidate the question which refers to epilepsy.

In order that a person may be declared unaccountable on the plea of epilepsy, it seems to us that it ought to be proved:—

- (1) That he is afflicted with epilepsy.
- (2) That the criminal act bears a direct relation to a fit of epilepsy, under some one of its forms.
- (3) That the act shows the characteristics which accompany epileptic phenomena.
- (4) Or, that epilepsy has impressed on the intelligence or character permanent modifications.

During his detention of over a month H. C. had no nervous attack.

Previous to that time, the information is limited to three vague facts, the details of which are completely wanting. Once he fell whilst going downstairs with a lamp in his hand. At another time his wife found him in his shop stretched on the ground, apparently sleeping; and the third time, he was carried to the house by persons who informed his wife that they had picked him up from the ground just as he had lost consciousness. Not once during his twenty years of married life had his wife remarked in him any convulsive phenomenon, nor anything approaching vertigo or absent-mindedness, nor had she

noticed anything which would indicate that he had suffered from nocturnal epilepsy. Even admitting as real his having lost consciousness sometimes, still we are not permitted to assert, in the absence of details about the phenomena which accompanied them, that they were of an epileptic nature. Three facts of an indefinite nature occurring during the life of a man forty-two years of age, may, at the utmost, allow an interrogation point to be placed but do not authorize us in any wise to admit that H. C. was troubled with epilepsy. On the day the crime was committed, his wife remarked nothing in him which was not customary.

In the absence of proof of the existence and reality of the disease, we may look further to find out if the act has the characteristics of an epileptic phenomenon. The principal manifestations of epilepsy, no matter what may be its nature, are characterized by their suddenness, the unconsciousness that accompanies and the amnesia that follows them. "They are acts, abrupt, sudden and unpremeditated, performed without motive, of which their author is not conscious and retains no remembrance, or at least only a very confused one." (Vallon).

A study of the circumstances under which the act was committed enables us to affirm, by the absence of these characteristics, that it cannot be a question here of an act which can be traced to an epileptic nervous disorder. We find here, in fact, a premeditated act, performed for profit, with all the appearances of sanity, with an idea even of its gravity and the recollection of which, in spite of his denials, has been retained. It was also only a repetition of identical acts having the same motive, namely, exploiting the lewdness of others for pecuniary gain. This business was known to his brother who had sought to dissuade him from it. "I told him that it would end with his being caught," he let slip in our presence.

Then, even if it could be presumed that H. C. is an epileptic, the act which he committed has not the characteristics of an epileptic phenomenon and cannot consequently be attributed to that nervous disorder.

The defendant appealed to his hereditary tendencies. The brother whom we have seen is a perfectly sound man. The defendant seems to differ from him only in some anomalies of character and in his moral disposition. It seems, therefore, that hereditary influence cannot be called into account in this case, only theoretically, in favor of a modification of his responsibility, insanity and epilepsy having been entirely laid aside.

Conclusions:—(1) H. C. is not a lunatic. (2) The crime of which he stands accused is not a pathological act, born of an irresistible impulse or disease nor was it inspired by insane motives. It reveals such motives as are to be found among the ordinary factors in the causality of criminal acts, namely, inordinate desire for gain.

II.

Mere Mental Weakness Associated with an Entire Absence of Moral Sense; Two Previous Convictions Followed by Imprisonment in the Jail and in the Penitentiary; Another Arrest with Medical Examination and Subsequent Commitment to a Lunatic Asylum.

E. L. was brought before the Police Court accused of having stolen a certain sum of money from his employer. When questioned, he acknowledged having appropriated this sum, but, by way of justification, he alleged reasons which the judge was unable to recognize as emanating from a sound mind. The Magistrate ordered, therefore, an examination to be made of his mental condition, which was entrusted to me. E. L. had already a criminal record and has several different sentences as follows:—October 5th, 1888, reform school, five years for robbery; May 25th, 1894, six months in jail for robbery; August 4th, 1896, penitentiary, three years for burglary.

E. L. is of medium height, well formed and vigorous. With the exception of the uncommon size of his ear-lobes, he presents no very striking deformity. He does not know how to read or write, but knows how to calculate a little. His memory has acquired a certain degree of development; he gave information about his life, not very full, it is true—for he is not prolix—but nevertheless exact. However, it was only after several interviews that I was able to make him give a complete narrative. He understands the meaning of the questions and answers them with exactness. His conversation is coherent, but it may be said with truth, that he does not shine by reason of his intellectual quickness, nor by the extent of the circle of his ideas, which is, on the contrary, very narrow. His mental deficiency manifests itself particularly with regard to the so-called higher faculties. He does not possess the power of synthesis, reasoning, generalizing and especially that of judging, which as regards the moral aspect of his actions, is marked with the most absolute defectiveness. He is entirely lacking in the power of adaptability to the various circumstances of life, and moral sense is totally wanting. He reasons about the misdemeanors he has committed as if he had never acquired the least idea of morality. It is evident, in his case, that the dulling of the intellectual development, which is congenital, has affected the moral sense and the so-called higher intellectual faculties more than those of the lower order. (Magnan). Were it not for this absence of the moral sense and the want of adaptability, he could perhaps have applied in a normal way to practical purposes his limited intellectual power and led a useful life, however lacking in brilliancy it might have been.

Considered just as we find him, we may assert with truth in the words

and meaning of the statute that E. L. labored under natural imbecility or disease of the mind to such an extent as to render him incapable of appreciating the nature and quality of the act and of knowing that such act was wrong and, hence, that he is unaccountable both from a legal and medical standpoint. This conclusion was accepted by the court and E. L. was committed to the asylum.

We thought that it would be interesting to know the opinion of the directors of the institutions where E. L. had been incarcerated, and we received the following correspondence from them.

The Director of the Reform School wrote to us as follows:—

“We have had among our youthful delinquents a boy named E. L. He was in our school from October 5th, 1888, to October 5th, 1893, and he learned the tinsmith’s trade; but it was impossible to teach it to him properly or to reform his character on account of the weakness of his mind. His companions considered him demented and were very much on their guard against him, on account of his strange manner of acting and his violence in his moments of anger. He was twelve years old when condemned; he had not made his first communion and as an evident characteristic mark, he was noted “simple.” He had attended school three years, but neither knew how to read nor write. The young man was condemned for stealing tobacco.”

We are indebted to the courtesy of the Prefect of the penitentiary for the following information. “E. L. served almost three years imprisonment in the penitentiary. As you remarked he is a simple-minded person who is approaching a state of complete imbecility. It was almost impossible to make him understand and follow the regulations of the institution. Before my arrival he was nearly continually in the punishment cells, dungeon, etc., for infraction of the rules. Having found out to a certainty his mental condition, I treated him accordingly. He was very stubborn, but not wicked. In my opinion he would be better in the asylum than in the penitentiary.”

It would seem that this unfortunate young man must be added to the already long list of unrecognized and condemned lunatics who have undergone their penalty to the full extent. It is owing to the keen intelligence and to the humane feelings of the cautious magistrate before whom he last appeared, that he escaped another condemnation.

TWO CASES OF AUDITORY PERIPHERIC HALLUCINATIONS.

BY

E. P. CHAGNON, M.D.

I have observed at the St. Jean de Dieu Asylum, two men afflicted with hallucinations of the sense of hearing, who, I think, may prove interesting on account of the causes which excited these hallucinations.

CASE I. G—, is thirty-two (32) years old, a laborer. His father died of "dropsy." Besides this, there is nothing worthy of note in his family history.

During his entire life, G—has been afflicted with aboulia. For example, he got married at twenty-five years of age, very much against his will, so he says. At every visit he paid the woman whom he was courting, he resolved to refuse to accept the offer of marriage "she made him;" but each time he was unable to find the necessary will-power to reject her suit. At the foot of the altar he cherished the hope of being able to say "No," but in vain; for in the presence of the priest, he said "Yes." One day, being in need of gloves, he decided to devote seventy-five cents towards their purchase. The store-keeper to whom he applied showed him a pair which sold at the high price of four dollars, and he bought them, again unwillingly. Up to the time of his entering the asylum, his life was thus replete with actions stamped with aboulia.

Admitted into the St. Jean de Dieu Asylum, September 8th, 1898, G— manifests hallucinations of the sense of hearing only when he hears a noise of any kind, or a sound, or when he experiences an impression through the sense of touch. If he is resting, and his companions are walking in his neighborhood, he immediately hears voices, apparently coming from their feet, and if he himself gets up and walks, voices in like manner seem to issue from his own. In fact, voices seem to proceed from everybody's feet when they come in contact with the ground with a noise either soft or loud. The noise of water poured into a glass causes the hallucination. I rumples a paper, the noise says to him, "You are a — fool." I strike the iron armature of an ink-stand with my pencil; with metallic voice there comes to him "you are a simpleton;" if he scratches himself, he feels a sensation that awakens the voices.

CASE II. M—, twenty-six years old, unmarried, a farmer, was admitted to the asylum, May 25th, 1899.

His maternal grandmother and grand-uncle died demented. One of his uncles is a victim of alcohol.

M— shows but slight intelligence. As in the case of G—, his hallucinations of the faculty of hearing are only produced by noises or sounds. They are produced whenever his companions or he himself begins to walk. There is, however, this distinction which he makes, that whilst the voices that reach him from his own boots speak to him musically, those from others are discordant.

The man who was the subject of the first observation returned to his home cured in December of the same year, after a three months treatment in the asylum. He has been seen again since that time. He has his pockets stuffed with medicinal powders and bottles of medicine having developed into a hypochondriac.

The other patient has also just been discharged from the asylum, slightly improved.

What I point out particularly in these two cases, each of whom presents a pathological past, is that it is absolutely necessary for them to undergo an impression either upon the sense of hearing or of touch to experience auditory hallucinations; no noises, no voices. If everything is quiet, they have no hallucination whatever.

NOTES FROM PRACTICE IN THE ARGENTINE REPUBLIC.

BY

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(CONCLUDED)

Myiasis Narium—Maggots in the Nose.

The following cases, rare even in this semitropical climate will probably be of interest as I find none of the kind reported in the *Lancet* during the last twenty-five years and in the ordinary English textbooks, this condition is not mentioned.

On the morning of January 28th, 1896, I was called to assist the foreman of Milani and Company's jerked beef factory, J. B., an Italian, forty years of age. I found him complaining of intense pain in the right ear and right parotid region.

On examination I found only a slight redness and fulness of the tonsil and soft palate on that side. There was no discharge from the nose or ear or swelling of the face at this time. I had no instruments with me for making an examination of the ear or posterior nares, so without making a definite diagnosis, I gave him half a grain of morphine hypodermically and left him. The following morning they told me by telephone that he was much worse, not having slept and then suffering very great pain. I advised sending him into the hospital at Chascomus, where I saw him at 10 a.m.

His face was now swollen on the right side and on examination I discovered something moving on the floor of the right nasal cavity, about two-thirds of the way back. With a pair of forceps I removed a maggot of a whitish yellow colour about half an inch long, smaller towards the head than behind, without feet, segmented, and with a small dark spot, nearly black, near the posterior extremity. On searching my library I found that this maggot corresponded to the larva of the *Lucilia hominivorax*, a kind of bluebottle fly. Beyond this fact, which I discovered in a French medical encyclopædia, I could find nothing, and being ignorant of the experience of others, I began the treatment of the case on general principles ordering a nasal douche of bichloride of mercury, 1 to 2000, followed by insufflations of calomel and iodoform in equal parts. My colleagues, all native doctors, were in the same boat as myself, not one of them having seen the disease before or having a description of it in their libraries.

The following morning, January 30th, on going to the hospital, my patient complained of being unable to breathe through his nose and

the nurses informed me that the solution would not pass. I found the cause to be a living mass of larvæ and began to take them out with forceps. After clearing out a few the man blew his nose and out came from forty to fifty maggots mixed with a very foul and bloody mucopus. Although from the first moment of the treatment maggots continued to come away the pain was not fully relieved until this large number was removed. The man had suffered terribly, morphia and chloral having no effect upon the pain.

On the afternoon of this same day, for the benefit of a colleague who had expressed a desire to see the maggots, I ordered the nurse to put a couple in alcohol and about an hour after called at his house. Much to our surprise both worms were still living and wriggling at the bottom of the corked bottle. At my request my medical friend saw the patient with me the next morning as his condition was far from satisfactory. At our visit we found the temperature 103° F., pulse 120, and the man looking very badly. On the soft palate, extending from its junction with the hard palate to a point a little to the right of the uvula and to about a quarter of an inch above its base, a white exudation had appeared. My colleague pronounced the condition to be diphtheria in spite of the maggots, and although I did not agree with him, the patient was placed at once in a private ward. The symptoms were very like those of diphtheria, if we except the presence of the maggots, and one could not be blamed for mistaking the two conditions, the exudation having exactly the same appearance as that of diphtheria. My friend agreed with me regarding treatment and the antiseptic solutions were continued while I ordered quinine and bitters for the constitutional symptoms. Owing to purging and slight salivation I changed the mercurial preparations, camphorated naphthol as a paint and carbolic acid, 1 to 40, for the douche. With forceps I removed without any difficulty the afore-mentioned membrane which was lozenge shaped, one inch wide by two long, thick, glairy, tough, and of a dirty, pearly white colour. During the afternoon the patient spat out another bit of the same size and character from the same place. The mucous membrane beneath was raw and bleeding.

On February 1st, the soft palate had sloughed leaving an aperture about the size of the above mentioned membrane and through this opening another lot of larvæ made their way.

My discovery of January 30th made me rather curious to know how long these larvæ would live in the different antiseptic solutions in general use and by experimenting I obtained the following results:—

Bichloride of mercury, 1 to 2000, movement ceased in 105 mins.

Bichloride of mercury, 1 to 1000, movement ceased in 60 mins.

Carbolic acid, 1 to 40, movement ceased in 110 mins.

Carbolic acid, 1 to 20, movement ceased in 70 mins.

Alcohol (spiritus vini rect.), movement ceased in 95 mins.

On seeing these results I became rather astounded and doubtful as to the outcome of my treatment; still, from this date to February 15th, my patient did well. He had slight fever, no pain, and was getting rid of from one to six maggots per day.

On February 6th I received from a medical friend in Buenos Ayres Dr. Morrell Mackenzie's work on Diseases of the Throat and Nose, Vol. II. Here I found this disease described and inhalations and injections of pure or diluted chloroform into the nasal fossæ recommended as treatment.

As my patient was doing well and there appeared to be no more maggots, I did not use chloroform in this case except to try its effect upon two maggots which came away on February 8th. In pure chloroform one ceased moving in one minute while the other in chloroform vapour kept moving for three minutes.

The last maggot, as I thought, having come away on February 8th, on February 11th I put four wire sutures in the cleft palate and drew it together. Although there was still some ulceration I did this operation at this time on account of the great difficulty the man had in swallowing, speaking and breathing, for, owing to the loss and laxness of the tissues, the uvula hung down so low as every now and then to get under the epiglottis causing coughing, while all his food had to be given by a stomach tube. This was very unpleasant and at the same time did not allow him to take sufficient nourishment. The operation, owing to what followed, was not a complete success, but it lifted the uvula and made the opening very much smaller for a subsequent operation done on March 5th.

On February 13th the patient complained of pain and said he thought that he felt something behind his right tonsil pricking him at this spot. He imagined that I had let a bit of silver wire get in behind. There was some swelling and œdema. From this moment he grew rapidly worse. I diagnosed an abscess behind the right tonsil and pillar of the fauces. Pulse was small, weak, and very rapid, temperature 105.5° F., there was hæmorrhage from behind the right tonsil, and he experienced great pain. As over twenty days had elapsed since the beginning of his illness, and as on the closest examination with the laryngoscope nothing moving could be seen, neither myself nor my colleagues suspected what followed.

On February 18th, I opened the abscess just at the edge of the right pillar and bloody, foul pus and thirty or forty maggots appeared. I

enlarged the opening and washed out a like number together with their foetid nest. The fever and swelling soon subsided. Three maggots came away on the 19th and on the 20th one more. I then began feeding the patient with the stomach tube and he soon got stronger. Washing out with permanganate of potash solution in a few days relieved the foetor and left me nice clean clefts for an operation. On March 5th, I closed with silver wire all the apertures in the palate and on the 15th he left the hospital cured. The maggots in this case were not all counted, but 200, more or less, came away, all living.

Case II. A gardener was sent into the hospital on February 24th of the same year. He presented swelling of the face and nose and had been suffering four or five days with pain and loss of sleep. He had received several injections of kerosene into the nostril. Only eight maggots came away during the week he was in hospital and he had very slight epistaxis. The treatment used was washing out with chloroform water, inhalations of chloroform, and smelling of gum camphor. This was a very mild case, the eggs being probably deposited close to the external opening of the nostril.

Case III. This case which occurred simultaneously with my two previous ones was attended by Dr. de la Sota, who had the kindness to write it out for me when I told him I intended to publish my two cases. I will simply translate his report.

“Manual L., Spaniard, aged 19 years, single, workman, came to my consulting room on March 2, 1896, and on the same day entered the local hospital as a pensionist.”

Personal History.—He says that when nine years of age, while at a college in Spain, he had a fall striking on his nose. Since then he has suffered from occasionally profuse but more often slight attacks of epistaxis with a running of “matter” from the nostrils. He does not know whether this matter was mucus or pus. In the summer time when he forgot or on account of his occupation was unable to wash out his nasal passages with water as he had been ordered to do by his physician, he suffered from a bad smell from the nose especially noted by his fellow workmen. Beyond this and the presence of a broken and rather peculiar looking nose the man is sound physically.

Present Disease.—About 2 p.m. on March 2nd, he came to my office and told me that he had been in Buenos Ayres two nights before and had slept out in the paddocks of the city slaughter-houses after a hard day's work driving cattle to town. Early that morning he awoke sneezing a great deal and with blood clots in his nostrils, which he thought very strange because at other times he had had no sneezing and the blood had run freely instead of being in clots. He had also felt a kind of pricking or irritation, difficult to explain, in his nose and to-

wards his forehead, only relieved by sneezing. In spite of this he again went to sleep being very fatigued. On waking up with the other cattle drivers he was worse and his companions noticed a swelling of his nose, left side of face, and eyelid of the same side. With the peculiarity of the Argentine he paid no attention to these things, nor did his companions, and did not consult a doctor. His friends said it was nothing and would go away. Still he felt uncomfortable sensations in his left nostril and had a watery discharge from it, foetid, and mixed with a little blood. He also felt feverish, had no appetite, was thirsty and weak. From Buenos Ayres he set out for Dolores on horseback, following the line of railway in case he should get worse and require to complete his journey by train. Last night he again slept out about fifteen miles from here, or rather he lay down intending to sleep but did not close an eye on account of the pain. Early this morning he arrived here and slept an hour or two in the house of a friend before coming to see me.

Present Condition.—March 3rd, a.m., patient lies on his left side, partly turned on to his face, with his head forced into the pillows, keeping both hands applied to his face and breathing through his mouth. His head and limbs are in continual movement. On being spoken to he sits up in bed in an indecisive fashion and acts as if his head were of an enormous weight or as if he were drunk. The left side of his face is swollen as on the previous afternoon and the same bloody, foul smelling fluid is running from the left nostril. On examination, nothing can be seen in the nose. He has not slept since the day before. Temperature 38.8° C. Complains of headache, want of appetite and thirst. The tongue is coated; the heart and lungs are sound, urine normal.

Two cases of a rare disease occurring in the previous month in the hands of two of my colleagues (the cases already reported) made me think of maggots and I did not hesitate in diagnosing myiasis narium produced by the larvæ of the *lucilia hominivorax*. I prescribed at once a nasal douche of salt water and told the sister in charge to blow into the nostril equal parts of calomel and iodoform after the douche. Some minutes after this was done my patient sneezed and out came about 80 maggots not yet fully developed but which reached their full growth the following day in a bottle with raw meat.

March 4th. To-day my patient has thrown off 30 or 40 maggots, of which I have picked out a few for experiment, *i. e.*, to see if I can obtain the chrysalis and later on the fly. Patient is worse, temperature, 39.9°, C.; pulse very rapid, and he is, to use his own expression, "crazy with his head." I gave him antipyrine instead of the quinine of yester-

day, and told the sister to use chloroform water instead of the saline solution.

March 5th. Saw him twice to-day. He continues throwing out of his nose a goodly number of maggots, some large and some small and most of them living. The treatment was not changed except letting him have an occasional inhalation of chloroform.

March 6th. Since yesterday afternoon he has not thrown off a single maggot and is very ill, acts like a crazy man, it being impossible to keep him quiet. I began the chloroform inhalations at short intervals and in an hour had the satisfaction of seeing about 150 maggots with their filthy nest of bloody, putrid pus coming out of the nostril in a mass.

From that minute he began to make rapid improvement and no more maggots came away up to yesterday, March 10th, when he left the hospital for his home in Dolores, still very weak but able for the four hours journey by train.

This individual had thrown off at least 250 living and perhaps 30 dead maggots."

I saw this case several times with Dr. de la Sota, but could never see anything wrong with his soft palate or throat, so suppose the fly deposited her eggs higher up in the nose than in Case I. Doctor Letamendi, who sent me Case II, had been in Chascomus for nine years and for six years previously in Buenos Ayres, and had never seen a case of this kind so it must be rather rare.

Very little is said about the disease in Mackenzie's text-book, so I will refer to some of the practical points I have since learned from Dr. Edward Obejero (a pupil of Morrell Mackenzie, by the bye) professor of diseases of the nose and throat in the University of Buenos Ayres. He says it nearly always occurs in persons suffering from ozæna or who have bad smelling discharges from the nose from any cause; that it is often fatal and the best treatment is chloroform, either as a vapour or in solution, and an infusion of albahaca, a native plant, which I do not think is recognized in the European pharmacopœias. He says also that the destruction to tissues is sometimes very great. I, in my nine years and a half in this country, have only seen these three cases, all in a month. Dr. Goldsack here in Mendoza has told me of a case in a young lady, much similar to the first case reported, and which was fatal in four days from what he considered meningitis.

From what I have been told, Case III of this paper is most typical of the three reported.

Two Cases of Diaphragmatic Hernia.

On June 29th, 1894, I was called out of bed to see a wounded man, H. L., aged forty years, a healthy, strong cattleman. He had been

wounded in the afternoon twenty miles from Patagones where I then lived.

I found him weak from the loss of blood and the hardship of a journey in a springless cart on a mattress. He had a sheet applied so as to make a firm bandage outside of his ordinary clothes. On taking off his clothes, I found a knife wound, some four inches long, in the left side between the eighth and ninth ribs in the anterior axillary line. Over the wound and flattened down against the thorax was what I took from its colour and feel to be the lower margin of the left lung, a piece the size of an adult hand protruding. This projection I decided to amputate at once and to reduce the rest of the organ.

By candle light, my patient lying on the floor in the police station, I began the operation by peeling off the projecting mass from the thorax and pulling it out a little more so as to ensure cutting in a clean place. On cutting into the mass I discovered that it was not lung tissue at all but one of the appendices epiploicæ of, I supposed, the transverse colon in its curvature, or from the upper part of the descending colon. I cut off the bit, however, and then ligatured the arteries and then sutured the external wound and dressed it with iodoform gauze, etc. At that time I had never heard of, or if had I had forgotten, the possibility of such a thing as a diaphragmatic hernia. I was soon to know what it was practically.

The external wound in spite of everything, dirt, germs, and a twenty mile journey before being stitched, healed by first intention, but my patient kept ill. Pain, dyspnoea, and palpitation of the heart were complained of. On examination fifteen days after the operation, I found the heart pushed over under the sternum, the left lung also out of place while at least one half of the thorax was occupied by intestine. The patient refused to eat on account of the pain he said it caused him afterwards. The gurgling of a dose of salts could be heard at the left nipple. There could be no doubt of the diagnosis. He would not hear of an operation, and so far as I know, still has his hernia.

The symptoms in this case were pain, shortness of breath on the slightest exertion, inability to lie on the left side and, at first, palpitation. A year after the wound the symptoms were the same and he got much thinner.

Case II. What would an eastern Canadian doctor do if he were called by telegraph 39 leagues (107 miles), to see a patient with a stab wound of the abdomen?

At 8 p.m., on May 23, 1895, I was asked to go and see a gentleman named G. in Conesa, 39 leagues away from Patagones. They told me that he had been stabbed in the belly and that his intestines were out, and to come quickly. I telegraphed to his friends to wrap him up in a

clean warm sheet and keep him lying down until I came. There are two telegraph stations on the road between Patagones and Conesa, so his friends ordered fresh horses to be ready at any hour. At 11 p.m., I got into the saddle and at a stiff gallop started on my long ride. At 11.15 a.m., next day, I arrived in Conesa after changing horses five times.

G. had been wounded seventeen hours before in the epigastric region, was in great pain and vomiting had begun an hour before my arrival. I at once gave him a $\frac{1}{2}$ grain of morphine hypodermically, and after washing with warm boracic acid solution the extruded intestines, I replaced them and sewed up the wound without drainage. In an hour I gave him another injection of morphine. The vomiting ceased and, to make a long story short, he got better in a week.

Shortly after he began to get about he complained of pain, shortness of breath, and also inability to sleep on the left side. On examination I found the same signs, but not so marked, as in Case I; he never complained of palpitation. He would not be operated on and still lives, but can take no exercise, in fact I am told he is a confirmed invalid, and quite believe the story.

He was 55 years of age at the time of the wound and my surprise is that he did not die before my arrival from the peritonitis which had already started when I operated. The country air, free from germs, and the hardy constitution of the Argentine camp-men, explain why many very severe wounds of the abdomen are not fatal in the Argentine camps—camp country. I believe an operation would cure both of these cases and see that Treves recommends it in his *System of Surgery*, 1896.

SURGICAL GLEANINGS FROM ABROAD.

L. COYTEUX PREVOST, M.D., of Ottawa.

[CONCLUDED.]

Cancerous affections over there, as well as on this side, keep the surgeons in total despair. The unmerciful recurrences which so stubbornly and so frequently occur, ever after the most radical treatment, almost cause us to doubt whether we shall ever succeed in victoriously combating this formidable plague by surgical means. Indeed, we are anxiously longing for the time when bacteriology shall have, firmly secured, surrendered to us the germ of this disease or the vaccine which will shelter humanity from its deadly blows. You know through how many successive phases has passed, for example, the treatment of cancer of the breast. We thought sufficient, at first, to remove the tumor alone; the evil came back in the gland. The whole breast then was sacrificed every time; the cancer would spring up again in the axillary glands. The latter had to be carefully scooped out at every operation, even when they seemed to be perfectly sound; the hydra would appear in the aponeurosis of the thoracic muscles. Finally, Halsted deemed it indispensable to cut down, at a stroke, the seven heads of the monster, and proposed a truly herculean operation, advising the removal of everything at once: tumor, mamma, axillary and subclavian glands, aponeurosis and pectoral muscles. I saw McBurney perform that operation at Roosevelt; it took him one hour and a half to do it. According to him, this is the only operation which allowed his patients to remain, two, three and four years without any recurrence of the disease.

Gynæcologists are a prey to the same discouragement, with regard to the cancer of the uterus. At first, they merely amputated the cervix, and you remember surely with what talent Verneuil upheld this operation against those who already were advising total hysterectomy, owing to the frequent recurrences they had met after simple amputation of the cervix. Unfortunately, vaginal hysterectomy itself was so frequently found insufficient that gynæcologists lately thought it better to follow Halsted's example in mammary carcinoma. They proclaim that the only rational and efficacious operation is to remove the uterus by the abdomen in order to dig down into the pelvis and extirpate all the glands and as much as possible of the broad ligaments and parametric tissues. What will be the future results of this extensive mutilation? We cannot tell. However, I am very much afraid that it may share

the fate of the other operations which it boasts of advantageously replacing. I quite understand that it might be possible to scoop out all the pelvic glands in which the uterine lymphatics end, but how can we extirpate the glands which receive the lymphatics of the ovaries, situated, as they are, away up almost on the level with the diaphragm?

Finally, cancer of the rectum has so far defied all surgical treatment directed against it. Kraske has surely made a step forward but the number of cases amenable to his method is also very limited. An English surgeon thought he could go further, and has given lately a description of a process which permits us to reach the limits of the disease as far as the sigmoid flexure. Availing himself of Kraske's incision, he detaches the gut, gradually cutting the meso-rectum, and doing hæmostasis step by step. He pulls out as much as eight or ten inches of the intestine, which he resects, uniting afterwards the sound portion to the external opening. This may, perhaps, appear quite simple. You might try to do it. Still I believe that such an operation has some emotion in store for the operator who undertakes it.

The radical cure for hernia is now done everywhere. I saw it performed at the Mount Sinai Hospital by Gerster; at the German hospital by Willie Meyer; at St. Francis Hospital by Edebohls; at the Post-Graduate by de Garmo; and in Paris by Lucas-Championniere. All, except the latter, have adopted Bassini's operation. Lucas-Championniere operates differently and does not believe in the absolute necessity of uniting with such care Poupart's ligament to the conjoint tendon. After the section of the sac, he brings together the muscular lips of the wound and causes them to side one upon the other by a special disposition of the sutures, and lays the cord between this muscular layer and the integuments. He contends that this mode of operating is the best safeguard against the recurrence of the hernia.

The most striking feature which attracts the visitor's attention in New York is the excellence of the operative technique, and the irrefragable way with which the rules of asepsis and antisepsis are carried out. I willingly couple these two terms side by side, because, to my mind, it is impossible to adopt one method to the exclusion of the other. Whenever sterilisation can be obtained by heat, naturally this is the means we must resort to; but for all parts of the body which cannot be submitted to the action of a high temperature, antiseptics constitute the indispensable complement to the mechanical action of washing and scrubbing. However, I know some surgeons, namely, Outerbridge, who never use any antiseptic whatever, a fact which did not prevent this surgeon doing his hundredth laparotomy last year without accident. In some hospitals, surgeons and assistants don rubber or cotton gloves

in operating. Others cover their hair with a bonnet, and finally, some imprison their whiskers in a wide strip of gauze soaked in sublimate solution and tied behind their head. But every one of them is helped by one or more assistants accustomed to work with them and who, conversant with the habits of the operator, can guess his wants and supply what is required without being asked. This "team-working" is, to my mind, the *sine qua non* of a regular and rapid operation. I say rapid, but I do not mean that we must aim at those ridiculous records which some surgeons proudly boast of, claiming, for instance, that they usually remove a uterus in eight, ten or twelve minutes. No; still it is absolutely important that the patient should remain as shortly as possible under the influence of the anæsthetic and those operations lasting two hours or more should no more take place in the hands of a surgeon who knows his business and is surrounded by competent and skilful assistants.

They also try to-day to do abdominal sections with as few instruments as possible, and I saw several laparotomies performed with only one scalpel, one pair of scissors and a few hæmostatic forceps; always with the view of diminishing as much as possible all chances of infraction of the exigencies of scrupulous antiseptis.

There is no more discussion now about the advantages of Trendelenburg position which is adopted by all surgeons, especially when operating on the internal genital organs of the woman. It is owing to this position, which carries the intestinal mass away from the area of operation and allows us to thoroughly see the whole of the pelvis, that abdominal hysterectomy has become just as common an operation as formerly was ovariectomy, and which permits our freeing and removing almost without danger the appendages gorged with pus.

The size and situation of the abdominal incision are still a source of dispute in certain places. A great many surgeons claim that this incision should be as small as possible. Some contend that it should be made through the muscles; others stick to the old way, the *linea alba*. The wisest, in my humble opinion, are those who divide the tissues on the median line, cutting right down to the peritoneum without minding what they go through.

Some discussion about the closure of the abdomen. Almost every one uses three or four layers of sutures, but several and amongst them, very prominent men, such as Joseph Price, of Philadelphia, and Outerbridge of New York, still suture the incision through and through. I have already stated that the latter has recently done one hundred abdominal sections without accident, having very seldom, if ever, heard of hernia or suppuration. These extraordinary results, if they do not prove the superiority of his method, seem to show, at any rate, that it is at

least as good as any other. He attributes the absence of post-operative hernia in his cases to the scrupulous care with which he endeavours to catch the peritoneal lips of the incision as near their edges as possible, in order to avoid creating an infundibulum, which later on might produce a tendency to eventration. Post-operative hernia, anyway, is becoming more and more rare in the hands of all surgeons, and I believe that this fact must be attributed to the gradual disappearance of abdominal drainage to which we have now recourse only in exceptional cases. Glass drainage tubes belong hereafter to the domain of history. Rubber tubes are going also. Abdominal drainage with strips of iodoform gauze, seem to have a tendency to follow the others, and in gynecology, whenever a suspicious operation or some considerable oozing compels us to resort to drainage, it is through a vaginal incision that it is done, it is just as efficacious and surely more rational. With the disappearance of the abdominal drain, when we shall have found the means of avoiding altogether the suppuration of the abdominal wound in every case, we shall then very seldom hear of post-operative hernia. Yes, but here it is. Unfortunately that suppuration of the incision, those stitch abscesses, are still the nightmare of abdominal surgery. We do not know yet how to shelter ourselves against the misdeeds of *staphylococcus albus* which is securely concealed in the deep layers of the epidermis. However, I believe that this foe is quite inoffensive in the majority of cases, and that it annoys us only when we supply him with a medium of culture favorable to his development. This medium of culture is the moisture of the wound. I have studied this question with much care and have come to the conclusion that it is absolutely necessary in closing the abdomen, to pay the utmost attention to hæmostasis, putting a ligature upon all bleeding points. I am convinced that we are wrong in so frequently incriminating the lack of sterilisation of the sutures used when we meet with suppuration of the wound; hence all those different processes to sterilize ligatures and especially the catgut. A great many operators until very lately had even discarded altogether this beautiful material, owing to its ordinary unreliable sterilisation. However, this unjust ostracism shows more and more a tendency to disappear, and permanent sutures left in the midst of the tissues, are not meeting with the same favor as before. For instance, with the exception of Emmet, I do not know a single operator in New York who still uses silver wire, almost universally used five or six years ago, to suture the abdominal wound, and especially in performing trachelorrhaphy. Furthermore, we wonder whether silkworm gut itself is not beginning to undergo the same fate; I mean as permanent suture in the reunion of aponeurosis, because it is still quite commonly employed for the suture of the skin. Even for this, the subcutaneous suture seems to

become exceedingly popular. In fact, it is a perfect suture, aesthetically speaking; it has but the inconvenience of all continuous sutures: if it gets infected at one end, the whole suture is generally doomed. Edebohls has remained faithful to catgut sterilized at the temperature of 212° in boiling alcohol under pressure. He makes use of the finest kind, 0 or 00, and has always had with it excellent results. A great many are now using catgut sterilized by its immersion in a 4 per cent. solution of formaldehyde during 48 hours. I have been using myself, for the last year, catgut prepared according to this method, which I consider an ideal one because it allows of our sterilizing the catgut absolutely like all other ligatures, that is, in keeping it as long as we like simply in boiling water.

There are certainly, gentlemen, a great many questions of details, *e.g.*, preparation of the operating room, qualification of the assistants, size and situation of the line of incision, position of the patient, choice and sterilization of ligatures and dressings, etc., etc.; and I am far from pretending that we should disregard all these important precautions. But it would be a deep error to believe that here only lies the secret of success in the formidable operations of modern surgery. It suffices to see, once, our masters at work, to remain convinced that something else is required to safely venture ourselves on such grounds. In spite of the display of all the means which the antiseptic arsenal contains, it is criminal, it seems to me, to plough the entrails of a patient, knife in hand, without possessing the coolness, the tact, the intelligence and the anatomical and surgical knowledge which constitute a true surgeon. It is only after a special and deep study, after the frequenting of the amphitheatre and hospitals, and the attentive contemplation of the work of our masters, that any one is allowed to legitimately hazard himself in that surprise-box which is called the abdomen. To cut out and extirpate a tumor with more or less skill, to remove more or less diseased organs, and afterwards to victoriously rub our hands together with satisfaction over the operation, is a very poor result after all, if the patient dies in a few days, or if later she continues to suffer from the same symptoms she was complaining of before the operation. A great many seem to forget that the surgeon's supreme desire, when he takes the knife, should be the relief of the suffering being who begs his assistance. To reach this aim, more than one issue has to be considered in the majority of cases, and frequently a too hasty determination prepares for its author very bitter remorse. In spite of its progress, gentlemen, the philosopher's stone has not been found yet in surgery; and if the most eminent men, with incomparable richness of materials at their disposal, trod that path with so much shrewdness and caution, how much more necessary is it for less privileged others to do

all in their power to acquire the qualifications indispensable to their guidance. Above all, no human consideration should ever make us forget the old and charitable axiom: "*Primo non nocere.*" One must have sometimes the courage of confessing that there is a thing or two that he does not know or that he is not able to do properly. Pride or personal interest should never be put in the balance with the interest of those who confide their life or their health to our care. The fact of being able to terminate more or less successfully an operation perhaps sometimes undertaken at random, must not be the climax of our ambition, and every honest member of our profession should always bear in mind that his primordial duty is to eradicate an evil, heal up an injury, and relieve suffering.

I am sorry, gentlemen, that the limits I imposed upon myself in this paper do not allow my enjoying the pleasure to prolong in your company this incursion into the vast and so interesting field of modern surgery. But I would really feel much humiliated if, owing to the late hour, our worthy president found himself compelled to make me stop. Therefore, I shall end here, but not before I have said a word concerning a question which still continues to impassion all gynæcologists, although the discussion has begun somewhat to abate.

During the summer, it was my good fortune to pay a short visit to Paris, where I had the pleasure of meeting the charming man of whom you have surely frequently heard, since he is one of the lights of French gynæcology, I mean Paul Segond. Jacob of Bruxelles, Delageniere of the Mans, Laroyenne of Lyon, Doyen of Reims, Bouilly, Doleris, Richelot, Pozzi, Segond in Paris are as many constellations shining with the most resplendent brightness in the firmament of French surgery. Until 1896, a contest, international as it were, was engaged in between the French and American gynæcologists, in order to decide by which route was preferable to remove the uterus or the diseased appendages. The French were in favor of the vaginal and the Americans the abdominal route, and on both sides, irresistible arguments were brought forward. Both were combating in the light of experience. And surely, when one has performed an operation 400, 500, 600 times, he is entitled, I fancy, to give his opinion upon the matter. And such was the number of vaginal hysterectomies that some of the French surgeons had to compose their personal statistics. The Americans, if they had not, like the French, the same experience in vaginal hysterectomy, on the other hand, had just as frequently dealt with similar pathological conditions by the abdominal route, which, according to them, was undoubtedly the better way.

Jacob of Bruxelles, in 1895, thought he would cross the ocean, armed with all his instruments, and pay the United States a short surgical visit

to convince the stubborn Yankees of the excellence of his method. However, the results of his endeavours were nil; the Americans' convictions remained unshaken, and Jacob went back to his country, without having himself modified his own opinion.

Twelve months afterwards, Paul Segond followed the example of Jacob, and came to the United States, accompanied by his assistant, Dr. Chauveau. I was fortunate enough to meet both in New York at the time of the meeting of the American Gynæcological Congress. Every one was anxious to see the great French surgeon at work, and every day, in one hospital or another, patients were presented, upon whom he performed vaginal hysterectomy. His wonderful dexterity amazed everybody. "Indeed," said they, "when one operates with such ability it is not surprising that he should have a special predilection for vaginal hysterectomy."

Nevertheless, the Americans returned the politeness, and operated through the abdomen in the presence of Segond. Do you know what the result was? Segond returned to France, at first with shaken ideas, but very soon convinced that the truth lay on this side of the Atlantic, and at a meeting of the surgical society held in Paris in 1897, he made a characteristic profession of faith contained in the following title of a paper published in the Review of Gynæcology and Surgery: "On total abdominal hysterectomy in the removal of large fibroids and on the treatment of pelvic suppuration. Considerations upon its technique and upon the *superiority* of the American method."

I have nothing to add to this significant and eloquent declaration.

Must we conclude that vaginal hysterectomy is doomed and must hereafter always give precedence to abdominal hysterectomy? No; but the field of its indications has greatly diminished within the last few years, especially ever since that, owing to Trendelenburg position and the easy and effective protection of intestinal coils by antiseptic pads, we are allowed almost in every case to extirpate appendages full of pus, with hardly any risk of contaminating the peritoneal cavity. The results of the discussion have permitted the surgeons to render more precise the indications for the operation and to keep it together upon the ground which is suitable to it and where its excellence remains indisputable.

RETROSPECT OF CURRENT LITERATURE.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Movable Kidney Producing Symptoms Simulating Gall-Stone Colic.

MACLAGAN and TREVES. "Three Cases in which Movable Kidney Produced all the Symptoms of Gall-Stones." *Lancet*, Jan. 6, 1900.

A movable right kidney pressing upon the bile ducts was the cause of hepatic colic and jaundice in the cases cited by the authors. In each case a diagnosis of gall-stone was made before the operation, but in none was a stone found after the abdomen had been opened. In the first and third cases the kidney was found pressing upon the cystic duct; in the second case the pressure was upon the common duct.

The patients were women, one aged 35 and the other two 34 years. As their symptoms were almost identical, the history of the third case only will be mentioned. She was a woman of spare habit and had suffered for three or four years with indigestion, pain in the epigastrium and symptoms of biliary catarrh. During her attacks of pain the gall-bladder would be felt more or less distended, and after each she was slightly jaundiced. The right kidney was movable and could be felt under the liver. The attacks of pain became progressively more severe and she was persistently slightly jaundiced. A diagnosis of stone in the cystic duct was made and she was treated medically for some months without benefit. Shortly before surgical measures were adopted, she had attacks of pain every few days, pain so severe that morphia had to be used to control it. The gall-bladder was persistently enlarged and tender. At the operation the gall-bladder was found much distended, but no stone was found. It was discovered, however, that the upper end of the right kidney was pressing directly upon the cystic duct. The abdominal wound was closed and incision made in the loin and the kidney secured by three silk sutures. The patient has since that time put on flesh, has a good colour, and has had no return of the pain. An equally favourable result was obtained in the first and second cases.

Dr. Cordier, of Kansas, records a case exactly similar to that mentioned above where complete relief of the symptoms was obtained by securing a movable kidney.

Ligature of the Left Subclavian Artery for Aneurysm.

KAMMERER. "Ligature of First Portion of Left Subclavian Artery for Aneurysm: Death after four weeks." *Medical Record*, Dec. 23, 1899.

This case is of interest inasmuch as the vessel was tied within the thorax.

The patient, a man aged 47 with a luetic history, noticed a small swelling in the supraclavicular region four months before he entered hospital. When Dr. Kammerer saw him the tumour was the size of a man's fist and filled up the angle formed by the clavicle and the sternomastoid. The tumour was adherent to the skin. As the tumour was rapidly increasing in size and threatened to rupture externally, operation was thought advisable. A transverse incision passing over the manubrium sterni and the ends of both clavicles was made. A vertical incision extending from the cricoid cartilage allowed of the flaps being dissected back. About two inches of the sternal end of each clavicle and first rib were resected and a corresponding portion of the manubrium sterni. The main difficulty experienced in obtaining access to the aorta was caused by the arch of the superior cava and the innominate vein. These were, however, finally hooked up; the artery was exposed with the finger tip and cleared from the surrounding tissue. After much trouble an aneurysm needle with a thread was passed beneath the artery and the ligature consisting of several strands of chromicised catgut, was attached to the thread. The ligature was tightened until pulsation in the aneurysm entirely ceased. The vertical incision and the ends of the horizontal incision were sutured and the remainder of the wound was packed with gauze. For three weeks the patient progressed favourably. There was no pulsation in the aneurysm which had decreased considerably in size. On the twentieth day after operation the dressings were found saturated with blood and there was more or less hæmorrhage from that time onward until the patient's death from exhaustion on the thirtieth day after operation.

At the autopsy it was found that the hæmorrhages resulted from a rupture of the artery at the site of the ligature. The ligature was partially absorbed, but a few strands were still present, and these had almost completely severed the vessel. Whether or not the inner coat of the artery was ruptured when the ligature was applied remains in doubt, but the fact that no clot was found in the proximal side of the ligature would point to the vessel walls having remained intact.

E. J. Semple.

The Choice of an Anæsthetic.

An interesting discussion on the above subject took place some time ago before the Society of Anæsthetists of London, a full report of which is contained in the Second Volume of the Society's Transactions, just issued. Besides the regular members of the Society there were present, by invitation, a number of the more prominent London surgeons whose views will be read with interest.

Mr. E. F. White, late anæsthetist to St. Thomas's Hospital, in opening the discussion, held that the main point to be considered in making a choice was the question of the greatest safety. For general use, leaving out of account the more recent additions to the list of anæsthetics, he considered that in point of safety the three commonly used agents should be placed in the following order:—nitrous oxide, ether and chloroform. In doing so he quoted as the accepted statistics of deaths under chloroform and ether, 1 to 3000 for chloroform and 1 to 15000 for ether, and contended that this alone should decide between the two. The contention that ether was responsible for many deaths through the production of lung troubles after its exhibition, he thought was not proven, while the number of those who were saved from death during the operation by the stimulating effect of ether, though it could not be estimated, ought to be taken into consideration. Another point was that ether in moderately healthy persons is practically free from risk while chloroform seems to choose the apparently healthy for its victims. In the latter, too, there was no time available for restorative measures, death took place almost instantaneously, while in the former failure was more gradual and could be met by appropriate treatment.

Mr. White well expresses what we think is felt by all anæsthetists who have had a large experience with both agents when he says:—"As an administrator I feel happy when using ether, hearing my patient breathing deeply and regularly with a good pulse, a pulse and respiration that is not suddenly acted upon by reflexes due to the operation. With this pulse and respiration of ether any slight deviation is easily noticed and can be as easily rectified; whereas with chloroform such a change is very sudden and of grave import. The more I give chloroform the more anxious I feel during the administration of it; the converse with ether, for the more I administer ether the more confidence I gain. In operations that are likely to extend over a considerable time the advantage on the side of ether is very great, for after about three-quarters of an hour or even less of an administration, an anæsthetic sleep can be produced that is alike of advantage to the patient on account of the small amount of ether used and to the operator on account of the quiet state of the respiration, ether all the while helping

to ward off shock." Mr. White, however, feels that ether cannot keep off shock indefinitely and appealed to the surgeons to help in shortening the length of operations, a point worth considering as, now that the ability to operate rapidly is no longer considered essential in a successful surgeon, there is often a tendency to spin out operations unnecessarily, as, for example, while the surgeon is addressing his class.

The need of having a proper inhaler was held to be more essential in ether administration than in chloroform; the use of the cone which entails giving large quantities of ether was strongly condemned. The speaker preferred a Clover's inhaler.

Mr. Edmund Owen, one of the invited guests, took an entirely different view of the matter, strongly favouring chloroform. He, however, would insist on the services of a skilled anæsthetist in giving it. In support of his views he related the case of a lady, the matron of a surgical home, who had required an anæsthetic and who had begged to have chloroform given, not ether. On asking her "why not ether?" she had replied, "ether is beastly stuff," and this was his own opinion. It was the general opinion that there was more risk from chloroform, but he would say "its worth it." Arguments such as this can have but little weight and show a personal predilection rather than any cogent reasons for preferring chloroform. It is noteworthy that throughout the whole discussion the exponents of the general use of chloroform with one exception were the surgeons who were present by invitation; while on the other hand, ether found its warmest supporters among the professional anæsthetists.

Others who took part in the discussion were Mr. Arthur E. Barker, Mr. Herbert Allingham, Mr. Tyrrell, Mrs. Scharlieb, Dr. Silk, Mr. Henry Davis, Mr. Warrington Haward, Sir Felix Semon, Dr. G. H. Savage, Dr. Macnaughton Jones, Mr. Stanley Boyd, Mr. Eastes, Mr. Carter Braine and Dr. Dudley Buxton, the President of the Society. While there was great diversity of opinion regarding the proper anæsthetic in some operations, in others again there was perfect unanimity. The following is a summary of the preference expressed for one or other anæsthetic in the various regions, etc. Where one only is mentioned the opinion in favour of it was unanimous.

Intra-cranial operations. Chloroform.

Ophthalmic operations. Chloroform was used by the three who referred to this class of cases, but they all alluded to the danger of sudden syncope following division of the optic nerve, and two of the three advised giving a little ether just before this step was undertaken. (It would appear preferable to avoid the danger entirely by adopting ether in all cases).

Cleft palate. Opinion was unanimously in favour of chloroform, both from the impossibility of administering ether properly in these cases and from its tendency to produce a copious secretion of mucus in the respiratory passages.

Adenoids. Opinion was about equally divided, although most of the exponents of chloroform referred to the added danger of its use in this operation and recommended the substitution of ether if dangerous symptoms arose.

Tonsils. Here, again, the elevated position of the head usually adopted for this operation adds considerably to the danger from chloroform. (One would make the same comment with regard to adenoids and tonsils as in excision of the eye: Why not avoid the danger altogether by using ether?)

Larynx and trachea. Chloroform is to be preferred for the same reason as in the operation for cleft palate.

Glands in the neck. Mr. Owen drew attention to the extreme liability to the occurrence of sudden syncope during the removal of glands from the neck. (Here again the difficulty could be minimised by using ether).

Acute pulmonary diseases. Chloroform.

Thyroid. Only one of the speakers referred to operations upon the thyroid gland and, contrary to the general opinion, he (Mr. White), after a considerable experience with both agents, preferred ether.

Valvular disease of the heart. Where compensation is perfect, ether is preferred, but under the opposite conditions, chloroform.

Atheromatous vessels. Chloroform.

Abdomen. The general trend of opinion was in favour of ether as tending to minimise the danger from shock. Many of the surgeons, however, complained that there was more difficulty in operating under ether than under chloroform, both from the incomplete relaxation of the abdominal muscles and from the more violent movements of the abdominal contents produced by the deeper breathing of ether anæsthesia. One of the surgeons went so far as to say that the movements had made him seasick.

Renal disease. Opinion was pretty evenly divided, the existence of renal dropsy, however, was held to indicate chloroform.

Rectum and genito-urinary system. Ether.

Diabetes. In this disease there seems to be little choice between the two agents.

Parturition. Several of the speakers thought that ether should be more generally adopted for operations upon the parturient woman, pointing out that chloroform was not as free from danger as was generally held.

Age. The view at one time generally accepted, that chloroform carefully administered is almost free from danger in young children has been gradually changing of late years so that at present, even in London, one finds almost as many anæsthetists favour ether as chloroform. This change of opinion is due to the fact that statistics have shown that in proportion to the numbers operated upon there are as many deaths from chloroform in children as in adults; and also that ether can be administered easily to infants of a few months old. These two facts were evidenced by a number of the speakers. (The writer can verify the latter part of the statement from personal experience with infants under three months old, using a Clover's inhaler and administering the vapour very much diluted).

The A. C. E. mixture came in for a good deal of abuse and not a little praise. The majority of anæsthetists, however, who felt that something was to be gained by combining ether and chloroform, preferred to have both ready at hand and to change from one to the other as the case demanded rather than to use a mixture of doubtful stability and unknown proportions when vapourized..

(Throughout the whole discussion one notes the growing feeling in favour of ether, especially among the professional anæsthetists connected with the large London hospitals. There is abundant evidence, too, that, at least among the professional anæsthetists, the indications for the use of both chloroform and ether are becoming better understood, and men are less inclined to style themselves either "etherists" or "chloroformists," and to boast that they never give any but the one anæsthetic.

G. Gordon Campbell.

Obstetrics.

UNDER THE CHARGE OF WILLIAM GARDNER.

Rupture of the Uterus.

ROSS, JAMES F. W. "Rupture of the Puerperal Uterus." *American Jour. of Obstet., December, 1899.*

Ross divides cases of rupture of the uterus into four groups:—

(1) Those in which the rupture is immediately followed by symptoms of collapse and internal hæmorrhage. These he considers as hopeless from the first.

(2) Those in which rupture takes place but gives rise to no immediate symptoms and is only discovered on careful examination after the development of septic peritonitis, etc.

(3) Those in which the rupture is easily recognized and is not immediately fatal.

(4) Those in which the rupture is never recognized but in which septic symptoms develop without apparent cause.

According to such a classification the treatment must be directed. In the first class no treatment will avail as the hæmorrhage and shock prove rapidly fatal.

In the second class of cases he advises thorough cleansing and drainage from below, considering that nothing but evil could result from abdominal operation. He reports two cases which recovered through this line of treatment.

In the third class, where the patient is not moribund, the most satisfactory treatment is abdominal section with cleansing of the peritoneal cavity and the stoppage of hæmorrhage, either by approximating sutures or gauze packing, with the thorough establishment of vaginal and abdominal drainage. Suturing of the rent is not called for as it prolongs the operation and the edges of the wound are as a rule so bruised as scarcely to hold a suture.

In the fourth class of cases the difficulty is to make a diagnosis of uterine rupture or internal puncture. He considers that in all cases where the pulse is abnormally rapid when compared with the slight difficulty of the labour it is the duty of the physician to make a careful digital exploration of the uterine cavity in order to ascertain the presence of any rupture. Should a laceration be found, then the treatment should be that recommended for the third class of cases.

The Frequency and Mortality of Abnormal Pelves.

DAVIS, EDWARD P. "The Frequency and Mortality of Abnormal Pelves." *Amer. Obstet. Jour.*, Jan., 1900.

Davis, after an examination of 1224 patients who were of all races inhabiting the United States (except the Chinese and Indian), who were examined by pelvimetry and palpation both external and internal, considers himself justified in formulating the following conclusions:—

(1) Among child-bearing women of the United States of the white and negro races, 25 per cent. have pelves smaller than the average and 7 per cent. have pelves larger than the average.

(2) Four-fifths of the patients having abnormal pelves delivered themselves spontaneously. The operations most suitable for well marked pelvic contractions and most successful for mother and child are the induction of premature labour, symphysiotomy, and Cæsarean section when the mother is uninfected and the child in good condition, and embryotomy when the mother is infected and in bad condition and when the child is dead or likely soon to die.

(3) The general mortality rate and septic mortality rate of all classes of labour and of labour in abnormal pelves compare favourably with the results obtained by modern medicine and surgery when obstetric practice is conducted in accordance with the modern scientific knowledge of the subject.

Acute Puerperal Sepsis.

VINEBERG, HIRAN, N. "The Surgical Treatment of Acute Puerperal Sepsis with Special Reference to Hysterectomy." *Amer. Jour. of the Med. Sciences*, Feb., 1900.

Dr. Vineberg in this paper which was read before the American Gynæcological Society in May, 1899, replies to those who have rather severely criticized his work in connection with the surgical treatment of puerperal sepsis, and takes the opportunity to more clearly define his views upon the subject.

The objection most strongly urged against removal of the uterus in cases of puerperal sepsis is that in acute cases, *i.e.*, cases which succumb in spite of any treatment between the fifth and tenth days, operation is of no value as the patients die whether they are operated on or not; while in chronic cases no such operation is indicated, as they usually get better of themselves.

Vineberg defines "acute" puerperal sepsis as an infection which takes place either shortly before, during, or immediately after labour, which manifests itself by symptoms during the first week of the puerperium.

and in which the symptoms persist continuously with variable severity until the disease ends in death, in a cure, or passes into a chronic state. He then quotes from literature 38 cases of acute puerperal sepsis in which death occurred from the eleventh to the thirty-fifth day or on an average of twenty-three days.

In reply to the objection that it is worse than useless to remove the uterus in the hope of arresting a sepsis which has already become general, he cites the condition not infrequently met with in severe cases of appendicitis, where the gangrenous appendix is removed and the patient may get well in spite of a general infection while if the appendix were left in the abdomen the patient would certainly succumb. The points which he makes in his paper are:—

(1) "Puerperal sepsis is a wound fever or wound infection, and wound infection in the female genital canal, as elsewhere, calls for surgical measures such as free drainage, irrigation and a removal with a sharp instrument of any debris or exudate that may form on the surface of the wound. These means failing to accomplish the desired result, ablation of the diseased organ or organs, as a *dernier resort*, is indicated.

(2) In a given case of puerperal sepsis a thorough search is to be made of the whole of the genital canal in order to determine the site of the original infection.

(3) If this is situated in the uterus, curettage, drainage and irrigations are to be employed. In 95 per cent. of the cases of puerperal sepsis now met with this plan of procedure will be all that is necessary to bring about a cure.

(4) In the remaining 5 per cent., roughly speaking, those measures will not be efficacious to arrest the progress of the infection, as will be evidenced by the pulse, temperature, and general course of the disease, and sometimes by local signs. An exploratory laparotomy is then indicated and the further course to be guided by the pathological lesions found. In most of these cases total hysterectomy will be required.

When large collections of pus form and are so situated that they can be readily reached, either by vaginal incision or with one above either of Poupart's ligaments, no time should be lost in resorting to surgical relief. When, however, they are not so favourably situated judicious delay is advisable, with the hope that ultimately the pus may be evacuated without the risk of soiling the general peritoneum.

D. J. Evans.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

The Canadian Practitioner and Review.

October, 1899.

1. Infant Feeding and Infantile Diarrhœa. J. T. FOTHERINGHAM.
2. The Politzer and Gruber Clinics. JOHN P. MORTON.

November, 1899.

3. Ophthalmology and the General Physician. G. FLEBERT BURNHAM.
4. Acute Diabetes. A. F. MCKENZIE.

December 1899.

5. Heart Disease from an Obstetrical Point of View. ADAM H. WRIGHT.
6. Spina Bifida. GEORGE A. BINGHAM.
7. A Few Notes on Ear, Nose and Throat Work, as Taught in Berlin and Vienna. JULIUS E. KLOTZ.

1. Appeared in the September Number of this JOURNAL.

3. BURNHAM points out to the general profession how that some diseases, such as acute and chronic glaucoma, and iritis, could be much more satisfactorily dealt with, if they were recognized earlier, and were more clearly understood. He also urges the importance and difficulty of prescribing the proper glasses for the eye, and the necessity of the physician doing his share in showing to the public the farcial nature of the claims of the so-called "doctors of refraction."

4. MCKENZIE describes a case of diabetes that rapidly proved fatal, and gives a description of the disease.

5. ADAM WRIGHT, in a very interesting paper, considers heart disease from the point of view of the obstetrician, particularly in connection with marriage, pregnancy and labor. He thinks that a woman having a heart lesion which is compensated should not be prevented from marrying. Abortion should not be induced on a woman with heart disease, unless very serious symptoms are present, and premature labor should seldom or never be induced on account of the disease. Mitral stenosis is the most serious lesion during pregnancy and labor—aortic stenosis comes next—then probably aortic incompetency. Mitral in-

sufficiency is the least serious. The treatment during pregnancy would depend upon the indications, strychnine, digitalis, cathartics, nitrate of amyl, nitroglycerine, and regulating the diet. During the labor the action of the digitalis should be kept up especially during the first stage. Give strychnine and stimulants, if required, and chloroform, and as soon as the first stage is completed, deliver with the forceps. The patient should be watched carefully during the third stage, which is the most dangerous time, and for some time afterwards.

6. BINGHAM, in discussing spina bifida, says that he has not declined to operate in any case, and that he is as yet entirely at a loss to know where to draw the line beyond which the operation is unjustifiable. The presence of nerves within the sac is not necessarily indicated by deformities or paralysis. Leakage may occur for several days after operation, but may spontaneously cease, and if great care is exercised no sepsis may result, and the case make a complete recovery.

The Canadian Journal of Medicine and Surgery.

October, 1899.

1. Presidential Address at the Thirty-Second Annual Meeting of the Canadian Medical Association. IRVING H. CAMERON.
2. Christian Science. J. H. RICHARDSON.
3. Typhoid Infection without Lesions in the Intestines; A Case with Remarks. A. MCPHEDRAN.
4. How to Deal with the Consumptive Poor. E. J. BARRICK.
5. Fibrinous Rhinitis. D. J. G. WISHART.
6. Results Already Achieved at the Muskoka Cottage Sanatorium. J. H. ELLIOTT.

November, 1899.

7. Massage and the Relief of Eye-strain in the Treatment of Glaucoma. GEORGE M. GOULD.
8. Tuberculosis and Insurance. JOHN HUNTER.
9. Floating Kidney Simulating Diseases of the Genital Organs in Women. A. LAPHORN SMITH.
10. Observations on the Relation of the Uterus to the Thyroid Gland. CHARLES E. DICKSON.
11. Antinosine in the Treatment of Chronic Ulcers of the Legs. A. J. HARRINGTON.

December, 1899.

12. Some Incidents in the Life of John Hunter, Anatomist and Surgeon. A. PRIMROSE.
13. On the Significance of Bovine Tuberculosis and its Eradication and Prevention in Canada. J. GEORGE ADAMI.

14. An Inquiry Into the Etiology of Chronic Bright's Disease. A. G. NICHOLLS.
15. The Great Lakes as a Health Resort. E. HERBERT ADAMS.
16. Craniectomy for Microcephalic Idiocy. W. J. WILSON.

1. Appeared in the September Number of this JOURNAL.

3. MCPHEDRAN adds one more to the growing list of cases in which the bacillus of typhoid fever has been found in the organs without the intestinal glands being diseased.

4. BARRICK suggests the following plan for dealing with the consumptive poor. (1) The establishment and maintenance of a rural sanatorium in connection with each municipality or group of municipalities for the reception of such cases as admit of a reasonable hope of cure or improvement. (2) The erection and maintenance in connection with the above sanatorium of a suitable isolated building for the reception and treatment of such advanced cases of the disease as are unsuitable for sanatoria treatment, and until such provision is adequate, to utilize as far as practicable the various existing hospitals for that purpose, and to urge upon the authorities of such institutions the absolute necessity of adopting such means of isolation as may be approved of by the Provincial and Local Boards of Health. (3) The co-operation of the Dominion Parliament, local legislatures, municipalities, philanthropic and charitable organizations and individuals in providing the necessary funds therefor.

5. WISHART considers that the accumulated evidence proves that fibrinous rhinitis and diphtheria are not distinct diseases, and that all cases of fibrinous rhinitis need the same precautions as to isolation that diphtheria requires.

6. ELLIOTT describes the plan of treatment that is carried out at the sanatorium at Gravenhurst, and gives a statement of the results that have been obtained.

7. GOULD, four years ago wrote concerning glaucoma, that massage, properly and intelligently applied, would seem to be the most clearly indicated therapeutic measure to break up mechanically the clogging process, stimulate additional secretion of diluting and digestive fluid, and arouse normal function generally. He here cites several cases where this method had been employed with great benefit, and described the procedure.

8. Appeared in the November Number of this JOURNAL.

9. This paper has been noted as having appeared in several other Journals.

10. DICKSON, from the consideration of about two hundred cases, concludes that the diseases of the thyroid gland are much more common

among women than men. A direct sympathy, if nothing more, between the uterus and the thyroid is manifested in many ways. Before the establishment of menstruation the gland is quite often found to be in a hyperæmic condition, and which usually disappears upon the establishment of that function. Goitre occurring after puberty is frequently associated with amenorrhœa. During pregnancy the gland increases markedly in size, to become smaller upon or shortly after delivery. In many cases pregnancy is directly responsible for goitre, which makes its first appearance early after impregnation. It was noticed that while the thyroid gland was undergoing electrical treatment the susceptibility to impregnation had been markedly increased. The occurrence of the menopause is not always the signal for the recession or disappearance of a goitre, on the contrary, it may increase at any period. A goitre after the climacteric should be regarded with suspicion as being of a malignant character.

13. ADAMI discusses this subject under three headings. (1) Is tuberculosis in cattle a source of danger to other cattle, so as to seriously affect their well-being, and be a source of loss to their owners? (2) If infectious from animal to animal, is it infectious from animal to man and consequently a source of danger to the human race? (3) If infectious from animal to man, what are the commonest modes of infection and how can the danger be lessened?

14. NICHOLLS' paper is based upon his original communication which appeared in the March number of this JOURNAL, and contains a few new facts that have been elucidated, and the modification of some of the original ideas.

15. WILSON relates the history of a microcephalic idiot upon whom he performed craniectomy with marked benefit. The conditions which decided for operation were early ossification of the sutures and fontanelles and early dentition, and absence in so far as could be discovered of gross brain lesion.

The Canada Lancet.

October, 1899.

1. The Association of Pelvic Disease and Insanity in the Female.
ERNEST HALL.

November, 1899.

2. Non-Specific Urethritis. N. E. ARONSTAIN.

December, 1899.

3. Some Historical and Other Data on Circumcision. N. E. ARONSTAIN.

Dominion Medical Monthly.

October, 1899.

1. Movable Kidney. F. B. WILKINSON.
2. Surgery Among the Insane—Its Difficulties, Its Advantages and Its Results. A. T. HOBBS.
3. Why the Undefended Pelvis. ERNEST HALL.

November, 1899.

4. Diseases of the Kidney, Amenable to Surgical Treatment. CHRISTIAN FENGER.
5. Notes on the Diagnosis of Diseases of the Stomach. G. CHAMBERS.

December, 1899.

6. The Therapeutics of Conversion, or the *Vis Medicatrix Spiritus Sancti* as a Cure for Erotic Neurasthenia. A Graduate of Trinity Medical College.
7. The Distribution of Anthrax in Ontario. W. T. CONNELL.

1. WILKINSON cites a number of interesting cases of movable kidney, and deals with the symptoms, diagnosis, and treatment of this condition.

5. CHAMBERS, in a paper on the diagnosis of the diseases of the stomach, for clinical purposes divides these diseases into the following classes: 1. Cases with excess of mucus. 2. Cases with hyperchlorhydria. 3. Cases with subacidity. 4. Cases with excessive quantity of gastric contents. 5. Cases with diminished quantity of gastric contents.

6. Cases with normal functional signs.

7. CONNELL states that in Ontario anthrax is not so uncommon a disease as has been generally supposed. There are at present four centres where the disease has been proven to exist, viz., Guelph, Acton, Listowel and Kingston. On looking over the factors in common of these outbreaks, one can point as probable sources either to woollen mills or, more commonly, tanneries. The tanneries are the only factors in the Acton and Kingston outbreaks. Both are combined in the Listowel outbreak, while woollen mills appear alone in the Guelph cases. The wool and hides used were partially derived from foreign sources, and hence might readily be infected with anthrax spores. He concludes by describing measures that should be taken, first, to prevent further infection from outside sources, and, secondly, to root out the disease in the now infected local areas.

The Maritime Medical News.

October, 1899.

1. Enteroptosis and its Relations to Functional Disturbances. W. F. HAMILTON.

November, 1899.

2. Remarks on Puerperal Eclampsia, with Report of Cases. J. W. BRIDGES.
3. The Nervous Element in the Diseases of the Skin. G. G. MELVIN.
December, 1899.
4. Pyrexia; Its Pathology and Treatment. M. A. B. SMITH.
1. Appeared in the September number of this JOURNAL.

Canada Medical Record.

October, 1899.

1. Notes from the Clinic of DR. F. W. CAMPBELL.
November, 1899.
2. The Medical Aspect of Life Insurance. S. OAKLEY VANDERPOEL.
December, 1899.
3. Deviated Nasal Septum, (A Clinical Lecture). G. T. ROSS.
4. Procedure in Post Mortem Medico-Legal Examinations. C. A. HERBERT.

La Clinique.

Décembre 1899.

1. Remarques sur le Rôle du Médecin dans la Syphilis Ignorée chez la Femme Mariée. ADELSTAN DEMARTIGNY.

Le Bulletin Médicale de Quebec.

Octobre 1899.

1. La Technique des Autopsies. A. MAROIS.
2. Epistaxis. N-A. DUSSAULT.

Novembre 1899.

1. (Suite et fin), Technique des Autopsies. A. MAROIS.
3. Observations d'Examens aux Rayons. CHARLES VERGES.
4. Traitement de la Fièvre Typhoïde par l'Acide Borique.
F-X. DORION.

Décembre 1899.

5. Cardiopathie et Mariage. ARTHUR SIMARD.
6. Nature du Glaucome. L-O. GAUTHIER.

Reviews and Notices of Books.

THE HYGIENE OF TRANSMISSIBLE DISEASES. Their Causation, Modes of Dissemination and Methods of Prevention. By A. C. ABBOTT, M.D. Pp. 311. W. B. Saunders, Philadelphia, 1899. Price \$2.00.

Dr. Abbott's work is, we think, quite unique in English medical literature. Hitherto one has had to seek for the information it contains in works on the practice of medicine or surgery chiefly in the form of very summary and insufficient paragraphs on ætiology and prophylaxis. In this work is found a sufficiently detailed and systematic account of all the infective diseases with special reference to these two important points.

The first section of the work is devoted to a consideration of the general factors in the ætiology of disease. In the second section the transmissible diseases are taken up seriatim under the headings of Cause, Geographical Distribution, Modes of Dissemination, Portals of Infection and Prophylaxis. The third section deals with "Prophylaxis in General against Infectious Diseases, including vital, chemical, and physical processes, the Management of Contagious Diseases and Quarantine." An introductory chapter is devoted to a short historical account of the growth of our knowledge of hygiene, a plea for systematic instruction in this subject by qualified teachers, and a vindication of the practical utility of the sciences. Beyond a slight redundancy of expression and a perhaps not quite justifiable aggressiveness of tone in the introductory chapter, there is little to find fault with and there is much to commend. The very practical pages on disinfection, chemical and thermal, and on the special disinfection of rooms, privies, wells, sputum and schools, and of the hands will be welcomed by all practitioners of medicine and surgery as coming from one who has a personal knowledge of what he writes. There are numerous illustrations including maps, statistical charts, and diagrams and microphotographs of bacteria.

H. A. L.

PROGRESSIVE MEDICINE. Edited by Hobart Amory Hare, M.D. Lea Brothers & Co., Philadelphia and New York, 1899. Vol. III.

This volume fully maintains the standard set by its predecessors. Dr. William Ewart's contribution on Diseases of the Thorax and its Viscera including the Heart, Lungs and Bloodvessels, is the longest in the volume and the most generally interesting, and, as might be expected, is very complete. Of special interest are the sections on pleximetric bones and viscera and auscultatory percussion, the treatment of pneu-

monia and of pulmonary tuberculosis, and the cardiac murmurs and sounds. There is possibly a little too much material presented to the reader and the sifting process might have been pushed a little further without impairing the value of the article. Dr. Ewart has drawn largely on American writers.

The various skin affections are fully considered by Dr. H. W. Stelwagon. Eczema naturally comes in for its usual large share of discussion; lupus erythematosus, lupus vulgaris and leprosy are also the subjects of the more lengthy sections. Dr. W. G. Spiller deals with the Diseases of the Nervous System in 69 pages, giving a very complete review of recent contributions to our knowledge. The last section is that on Obstetrics compiled by Dr. Richard C. Norris.

H. A. L.

SAUNDERS' QUESTION-COMPENDS. Essentials of Diseases of the Skin, including the Syphilodermata, arranged in the form of Questions and Answers prepared especially for Students of Medicine. By HENRY W. STELWAGON, M.D., Ph. D., Clinical Professor of Dermatology in the Jefferson Medical College; Physician to the Department of Skin Diseases, Howard Hospital; Dermatologist to the Philadelphia Hospital, etc. Fourth edition thoroughly revised, illustrated. Philadelphia: W. B. Saunders, 1899. Price \$1.00.

In looking through the fourth edition of this well-known number of the series of Question-Compends, one is pleased to find that although it does not profess to be more than an aid to the student in acquiring the essentials of dermatology it contains a fair description of many of the rare and recently described skin diseases, of course, in the form of questions and answers. The plates, of which there are ten, and the illustrations in the text are excellent for a small book of this kind, and what is more are selected so as to be of great aid to the beginner in understanding the subject.

SAUNDERS' QUESTION-COMPENDS. Essentials of Medical Chemistry. Organic and Inorganic. Containing also questions of medical physics, chemical philosophy, analytical processes, toxicology, etc. By LAWRENCE WOLFF, M.D., Demonstrator of Chemistry, Jefferson Medical College, Philadelphia, etc., etc. Fifth edition, thoroughly revised by Smith Ely Jelliffe, M.D., Ph. D. Professor of Pharmacognosy, College of Pharmacy of the City of New York, etc., etc. Philadelphia: W. B. Saunders, 1899. Price \$1.00.

That there is not much new to add to a work on medical chemistry in the short time which has elapsed since the appearance of the fourth edition of this little book is not to be wondered at. The reviser has

contented himself with making a few alterations in the sections devoted to inorganic chemistry and in enlarging the scope of the organic chemistry, especially in the direction of physiological chemistry. Here, as views alter with great rapidity, even from year to year, there will be found considerable change from former editions.

SAUNDERS' QUESTION-COMPENDS. Essentials of Anatomy, including the Anatomy of the Viscera arranged in the form of Questions and Answers prepared especially for the use of Students of Medicine. By CHARLES B. NANCREDE, M.D., Professor of Surgery and Clinical Surgery in the University of Michigan, etc., etc. Sixth edition, thoroughly revised by Fred. J. Brockway, M.D., Assistant Demonstrator of Anatomy, Columbia University, New York. Philadelphia: W. B. Saunders, 1899. Price \$1.00.

The changes in this popular number of the Question-Compendes are best shown by quoting part of the reviser's preface to this edition. "The general outline and arrangement of the former editions have been preserved, some new matter has been added, a few small cuts have been discarded or replaced by larger ones, descriptions and statements have been corrected to accord with recent works, and many small words have been inserted adding to the clearness of the description."

INTRODUCTION TO THE OUTLINES OF THE PRINCIPLES OF DIFFERENTIAL DIAGNOSIS WITH CLINICAL MEMORANDA. By FRED. J. SMITH, M.A., M.D. Oxon., F.R.C.P. Lond., Physician (with care of Out-patients) and Senior Pathologist to the London Hospital. New York: The Macmillan Company, 1899.

This book, as the title indicates, is not so much a tabulated list of symptoms and physical signs of disease as an endeavour, by showing the relationship between the pathological conditions and the symptoms and physical signs they produce, to lead the student to draw correct deductions and so arrive at an accurate diagnosis. Thus, for example, taking the section on pain in the chest, the various organic lesions which might be the cause and the points by which to differentiate between them such as character, locality, etc., of the pain are first taken up; then pain about the region of the heart is discussed with a view to determining whether it be of gastric or cardiac origin; and lastly a form of pain situated about the lower ribs on either side but with no accompanying physical signs to account for it, a very common symptom by the way, is explained as probably due to old or recent adhesions of the spleen, liver, or lungs to the diaphragm, or of the intestines to spleen or liver and gall-bladder. The author thinks this is the likely explanation from the frequency with which such lesions are found post-mortem without

a history of any disabling illness during which they might have been produced.

Chapter I. takes up diagnosis in general with a description of the method of case-taking in use in the London Hospital. Chapter II. on the relationships between micro-organisms and zymotic diseases; Chapter IV. on diseases of the thoracic organs, one section of which we have referred to above; Chapter V. on some symptoms of the nose, throat, alimentary tract and annexa. Then follows a chapter each on diseases of the urinary organs, the joints, and the nervous system, and finally a chapter on the differential diagnosis of urgency cases. This latter will be found most valuable for the resident officers of any of the larger hospitals and will repay careful perusal by all.

Altogether the book is highly to be commended as tending to lead the the symptoms in a given case with the tabulated lists of the symptoms of the diseases to which it most nearly corresponds and determining in this way where it ought to be classed.

Society Proceedings.

QUEBEC MEDICO-PSYCHOLOGICAL SOCIETY.

*Stated Meeting, October 26, 1899; held at St. Jean de Dieu Asylum
Longue Pointe.*

DR. BURGESS, PRESIDENT, IN THE CHAIR.

Letters of thanks were read from Drs. Guerin and Urkhart, elected honorary members.

A letter was read from the Provincial Secretary informing the society of the adoption by the Government of the forms of medical certificate for admission of the insane recommended by the society at the last meeting. (See page 811 of the October number).

DR. CHAGNON gave notice of motion that at the next meeting he would move that a special committee be appointed to elaborate a uniform plan for classifying mental diseases and for preparing uniform tables of statistics from the various asylums of the province.

DR. CHAGNON proposed the formation of a society of the physicians connected with the various asylums in the Dominion of Canada with a view to becoming affiliated with the Medico-Psychological Society of Great Britain and Ireland. On motion of Dr. Villeneuve, the president and secretary were requested to correspond with the medical officers of the various asylums upon the subject.

Two Cases of Ephemeral Mania, Uncomplicated by Epilepsy, Intemperance or Parturition.

DR. BURGESS read a paper with the above title. (See page 938 of the December number).

DR. CHAGNON, in discussing the paper, referred to the following interesting case:—

CXL., 17 years of age, is a baggage master in one of our railway companies. His father died of liver disease at the age of 52; his mother and sister are in good health; two uncles died of tuberculosis. Patient suffered in childhood from measles and diphtheria.

On December 25th, 1895, he began to complain of loss of appetite, constipation, and insomnia with slight fever, followed in a few days by cephalalgia. He gave up work and one month later, January 24, 1896, showed signs of mental trouble which rapidly developed into mania. On January 30, he came under my care at the St. Jean de Dieu Asylum showing absolute incoherency, unceasing garrulity, disordered motions and complete insomnia. On February 5th, we found him on awaking

quite sane. Since admission he had suffered from most obstinate constipation.

On May 24, 1898, CXL was readmitted with a return of the disease which had made its appearance two days previously, after a day and night of hard work requiring great strain. Eight days later he was cured of this attack of mania.

On June 9th of the same year he took part in a religious procession during which he was exposed to a burning sun for more than an hour. The same evening he complained of cephalalgia, the following day refused all food and was in a half sleepy condition, and the next day was again a raving maniac. The duration of this attack was fifteen days.

On July 8th, another long exposure to the sun during a game of football was followed by another relapse lasting for a few days, and a fifth relapse took place on August 1st after a three days attack of fetid diarrhoea. This last lasted for ten days, but he did not leave the asylum until the 25th. After two days spent with his family he returned to the asylum on September 1st with a similar attack and was discharged on October 6th perfectly restored.

Thus, this patient had six attacks of mania which were perfectly distinct from each other and of variable intensity, the longest lasting fifteen days. Taking into consideration the pathological condition of the digestive functions at each attack, auto-intoxication seems a likely explanation of the cause, even for those relapses which seemed to be directly induced by exposure to the sun.

DR. VILLENEUVE referred to the case of a woman who had been admitted to the St. Jean de Dieu Asylum at intervals of several years, in 1885, 1894 and 1899, for three very acute maniacal attacks, which had begun suddenly without any apparent or appreciable cause and lasted not more than eight days on an average. The disease was hereditary in her case, one of her brothers having been insane.

Dr. Villeneuve said that the cases reported by Dr. Burgess exhibited clearly the characteristics which Vallon in his report to the Congress of French alienists and neurologists (1898) attributed to ephemeral mania, namely, abrupt appearance, reaching a climax very rapidly and likewise ending in a sudden manner by a return to the condition *quo ante*. The other cases could more properly be called attacks of acute mania of short duration. The cases reported by Dr. Burgess are remarkable from the fact that the attack of transitory mania that one of his patients presented cannot be traced to any pre-existing pathological condition. This is contrary to the opinion of almost the entire body of French alienists as confirmed by a unanimous vote taken at their congress in 1898, to wit, that transitory mania is always symptomatic. Several observations of this kind might re-open the ques-

tion which the French congress settled by its vote : " Does there exist a form of transitory idiopathic insanity?" During an experience of five years in the largest asylum and largest city of Canada as an alienist and medical expert Dr. Villeneuve had never met with a case of transitory mania which he was not able to trace back to some pathological condition.

DR. BURGESS, in reply, states that judging from the cases which he had reported, he would feel inclined to believe in the existence of transitory idiopathic insanity.

Two Cases of Auditory Peripheric Hallucination.

DR. CHAGNON reported these two cases. (See page 115).

Medico-Legal Cases.

DR. VILLENEUVE read a paper with the above title. (See page 109).

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

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A. G. NICHOLLS.

VOL. XXIX.

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No. 2.

POSTGRADUATE DIPLOMA COURSE IN PUBLIC HEALTH.

An important step has been announced by the Medical Faculty of McGill University in the establishment of a course of post graduate instruction to qualify for a diploma of public health on the same standard as the well known English diploma in that subject.

The special training required is:—

(1) Six months laboratory instruction in sanitary bacteriology, sanitary chemistry, and the chemistry and comparative pathology of transmissible diseases.

(2) Six months practical study of out-door sanitary work in connection with a health board.

(3) Lectures on sanitary law and sanitary engineering and other subjects not covered in the ordinary students' curriculum.

(4) Clinical training in the diagnosis and care of infectious diseases.

Twelve months must elapse between graduation in medicine and the granting of the diploma and the examination is of a searching and practical character.

The instructors are as follows:—Sanitary chemistry, Prof. R. F. Ruttan; comparative pathology, Prof. J. G. Adami; sanitary bacteriology, Prof. Wyatt Johnston.

The classes will be open to those attending the McGill Postgraduate

course in May and June, during which period many of the lectures and practical classes will be given.

The University has fortunately met with hearty offers of co-operation and support from the various health boards. Dr. Laberge, Medical Officer of the City of Montreal, having instituted a course in practical sanitation in which he will be assisted by Dr. Wyatt Johnston. Dr. J. A. Hutchinson, Medical Health Officer of Westmount, has also offered facilities for practical study and so has also the Board of Health of the Province of Quebec.

The importance of instruction in practical sanitation is equivalent to that of the clinical work in medicine and surgery for the regular medical degree, and we hope that the facilities thus offered may be fully utilized.

The number at present attending the course is eight, some of whom already hold appointments in connection with health boards. As the facilities for practical work are equally open to all medical graduates, we hope soon to see instruction for the diploma taken up by other medical schools and that regulation may be made by which in the future all persons obtaining positions on health boards will require qualification of this sort in order to hold them.

Apart from the full diploma course for medical health officers it is proposed to establish shorter courses for granting certificates in special lines of sanitary work for sanitary inspectors, disinfectors, etc. It augurs well for the success of the work that the Director-General of Public Health and the Chief Inspector of Stock for the Dominion have both expressed themselves strongly in favour of having officials practically trained in this manner.

McGILL LIBRARY, MCGILL UNIVERSITY.

FOR QUARTER ENDING JANUARY 31st, 1900.

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XIIIth INTERNATIONAL CONGRESS OF MEDICINE.

Paris, 2—9 August, 1900.

The French Executive Committee begs leave to notify the Canadian medical profession of the conditions of admission to the Congress and of inscription in the various sections.

1. CONDITIONS OF ADMISSION TO THE CONGRESS :

Membership will be granted.

- (a) To all doctors who apply for membership.
 (b) To the representatives of science who shall be presented by the Canadian Committee.

Members will receive their cards on forwarding five dollars to the Treasurer-general of the Congress, Dr. Duflocq, 64 rue de-Miromesnil, Paris, or to Dr. J. T. Loranger, 999 St. Denis street, Montreal, or to Dr. F. N. G. Starr, Biological Department Queen's Park, Toronto, Ontario.

This card will be required for admittance and to secure for the members the advantages reserved for them.

In forwarding payment, members should write their name and profession plainly and legibly, and subjoin their visiting card. They will also indicate the special section to which they intend to belong.

2. CONDITIONS OF INSCRIPTION OF COMMUNICATIONS IN THE SECTION :

Members intending to present communications to a special section should send to the secretary of his section the title and the résumé of his communication before the 1st of May, 1900.

In order to facilitate this formality the Executive Committee gives as follows the names and addresses of the secretaries of the various sections at Paris.

1. Comparative Anatomy—Auguste Pettitt, 6 rue Saint-Andre-des-Arts.
2. Descriptive Anatomy—Riessell, 7 rue de l'Ecole-de-Médecine.
3. Histology and Embryology—Retterer & Loisel, 15 rue de l'Ecole-de-Médecine.
4. Physiology, Biological, Physick and Chemistry—Dastre à la Sorbonne; Gley, 14 rue Monsieur-le-Prince; Weiss, 20 avenue Jules-Janin.
5. General Pathology and Experimental Pathology—Charrin, 11 avenue de l'Opéra; Roger, 4 rue Perreault.
6. Pathological Anatomy—Letulle, 7 rue de Magdebourg.
7. Internal Pathology—Rendu, 23 rue d'Université; F. Vidal, 155 Boulevard Haussman.
8. Infantile Pathology—Marfan, 30 rue la Boétie.
9. Therapeutics—Gilbert, 27 rue de Reme.
10. Pharmacology—Chassevant, 70 rue de Rennes.
11. Materia Medica—Chassevant, 79 rue de Rennes.
12. Neuropathology—P. Marie, 3 rue Cambacérés.
13. Psychiatria—Ant. Ritti, Asile de Charenton. Seine.
14. Dermatology and Syphylography—G. Thibierge, 7 rue de Surène.
15. General Surgery—Walther, 21 Boulevard Haussman.
16. Surgery of Infancy—A. Broca, 5 rue de l'Université; Villemain, 58 rue de Notre-Dame-des-Champs.
17. Urinary Surgery—Desnos, 31 rue de Rome.
18. Ophthalmology—Parent, 26 avenue de l'Opéra.
19. Laryngology, Rinology—Lermoyez, 20 bis rue La Boétie.
20. Otology—Castex, 30 avenue de Messine.
21. Stomatology—Ferrier, 39 rue Boissy d'Anglais.
22. Obstetrics—A. Barr, 122 rue La Boétie; Champetier de Ribes, 28 rue de l'Université.
23. Gynecology—Hartmann, 3 Place Malesherbes.
24. Legal Medicine—Motet, 161 rue de Charronne; Thoinot, 8 rue de l'Odéon.
25. Military Medicine and Surgery—Catteau, Ministère de la Guerre.
26. Naval Medicine—Langier, Ministère de la Marine.
27. Colonial Medicine—Kermorgant, Ministère des Colonies.

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