

Desiring to make a practical, useful journal for the General Practitioner, the Editors respectfully solicit Clinical Reports from subscribers and others.

DOMINION MEDICAL MONTHLY

AND ONTARIO MEDICAL JOURNAL

VOL. XIX.

TORONTO, NOVEMBER, 1902.

No. 5.

Original Articles

GALL-STONES.*

BY F. W. HALL, M.D., VICTORIA, B.C.

Mr. President and Gentlemen,—I am not prepared to present to you anything strikingly original, but to give a resume of the subject of gall-stones and a history of nine cases on whom I have operated.

It is now more than twenty years since Mr. George Brown, a general practitioner in London, operated for gall-stones, but it is only within the past dozen years that the operation has been familiar to surgeons and medical men.

In the early days of its history, the successful cases published by Lawson Tait and Mayo Robson aroused general expectations and made a deep impression on medical men as well as the general public.

The stones are found of almost every color—white, grey, brown and black; of any size, from a grain of sand to that of a walnut, or even larger; of any shape, round or smooth, sharp or angular, often faceted; and in any number, from solitary stones—which are usually large—to hundreds. The kind most frequently met with is the size of a pea, greyish-white in color, faceted when they have been lying in contact, most of them readily breaking down or easily crushed between the thumb and finger.

*Read before British Columbia Medical Association, August 29th, 30th, 1902.

How comes it that gall-stones are formed? Recall the fact that from a pint to a pint and a half of bile is formed and has to be excreted every twenty-four hours, and that this liquid has a high specific gravity and contains from a quarter to half an ounce of solid material, and we can readily understand that where there is any obstruction to its flow the liquid material may pass the obstruction, while the other ingredients remain behind and form concretions or stones. Further, by no means all the bile which is excreted by the liver passes directly through these ducts into the intestine, but a considerable portion of it after passing through the hepatic duct passes backwards through the cystic duct into the gall-bladder, which acts as a reservoir. Observe also the inverted position of the gall-bladder, the fundus at a lower level than a considerable proportion of the ducts, and you will readily perceive how, if the bile be abnormal or contain an excess of solid material, or there be any obstruction in the ducts, the liquid portion will pass through while the other constituents remain behind and solidify. When you take these facts into account, and likewise the feeble expulsive power of the gall-bladder—especially in old age—the origin of gall-stones need puzzle no one.

The materials of which gall-stones are mostly composed are, first, cholesterin; second, lime, more especially in its combination with bilirubinate.

There is now a general consensus of opinion that the main source of cholesterin when formed in excess is the lining membrane of the gall-bladder and bile ducts. And right here we have our strong argument for removal of the gall-bladder in cases of severe recurrent attack. Lime is one of the normal constituents of the bile. It is doubtful if it is secreted in any quantity, or at all, by the liver cells. Most probably it is entirely the product of the disintegration of the cells lining the hepatic ducts. It is evident that not only cholesterin, but bilirubinate of lime, and all the materials that go to the formation of stones, have their origin in something that produces irritation of the lining membrane of the gall-bladder and bile-ducts.

The indirect causations of gall-stones are:

1. *Heredity*.—That there is an hereditary tendency to gall-stones we may regard as probable, but, like many things else in the field of medicine, as “not proven.”

2. *Age*.—Under twenty years of age they are seldom found, but more frequently as age advances.

3. *Sex*.—Gall-stones are four or five times more frequent in women than in men, and the causes are universally referred to pregnancy, diseases of the uterus, corset-wearing, and to some extent to sedentary habits.

4. *Occupation*.—A sedentary life, bad digestion and brain-fag are the elements in occupation that we might expect to influence this disease.

5. *Locality*.—In India and tropical countries the disease is extremely rare. In Europe it varies in frequency, being uncommon in Italy and Denmark, frequent in Germany and Austria, while England holds a medium position.

6. *Diet and Digestion*.—Badly digested food is conveyed to the liver, and part of it being excreted in the form of bile, any irritating properties it possesses set up inflammation of the bile-ducts, produce an increased supply of cholesterin, favor combination between bilirubin and calcium, and cholesterin and bilirubinate of lime forming. Mayo Robson and Brockbank regard an abundant supply of nitrogenous food as a preventive of gall-stones.

7. *Worry, Angry Passions, and Long-continued Grief* have a wonderful effect on bile. Thousands of years ago some observant Greek gave to melancholy or depressed spirits, through real or imaginary causes, the name "hypochondria."

When a stone has been set in motion, one of three results must necessarily follow: (1) It must pass either directly through the ducts into the duodenum; or (2) become impacted in the ducts or in gall bladder; or (3) rupture the ducts or the gall-bladder and find its way into the duodenum or elsewhere.

1. The size of stone that passes directly through the ducts depends for the most part on the stage of the disease. In those who have suffered long from gall-stones, one finds the ducts so much distended that they can admit a finger, and when this happens stones as large as a cherry or a plum can pass directly into the bowel. In the early stage of the disease, I do not suppose a stone much larger than a pea is likely to escape being impacted or rupturing the duct. The stone may lodge for a time at the entrance into the common duct, or again where the common duct widens somewhat before its outlet through the coats of the duodenum.

2. The stone may become impacted in the ducts and increase considerably in size after leaving the gall-bladder. When a stone has become firmly impacted, there is no certain prospect of speedy relief, but you have to look forward to the possibility of rupture of the duct, septic poisoning, or death by exhaustion. A gall-bladder may be distended to its utmost capacity with bile or stones, and the cystic duct completely blocked, and yet there is not necessarily jaundice. It is only when the passage of bile through the hepatic or common duct is entirely prevented that jaundice is complete. Though this blockage is generally due to

stone, it may be caused by mucus or pus in bile-ducts, by cicatrized ulcers, adhesions, the pressure of a growth, or by paresis of an over-distended gall-bladder.

3. If stones do not pass directly into the duodenum, nor become impacted in the ducts, they must make their way through the walls of the gall-bladder or ducts into the intestines, or elsewhere; and the only course left for the surgeon is to cut down and remove the obstruction.

A painful onset of chronic jaundice must always give rise to the suspicion either of chronic catarrh, dependent on cancer of the liver, or of occlusion of the hepatic or common bile-duct by a growth; and, if this be associated with distension of the gall-bladder and rapid loss of weight and strength, cancer of the head of the pancreas will probably be found.

On the other hand, the history of an attack of pain in the upper abdomen, followed within twenty-four or thirty-six hours by jaundice, and preceded by so-called "spasms," either recently or at some remote period, is highly suggestive of gall-stones. In the latter case, the jaundice will probably be less intense than in the former, and an intermittent fever with chills and sweats will probably be present or have been noticed at some stage of the illness.

Enlargement of the liver is much more common from obstruction due to cancer than in that from gall-stones—though it may be present in either. In cancer, however, nodules or irregular masses may be discerned; and in gall-stones an elongation of the right lobe of the liver, which is apt to be mistaken for distended gall-bladder, can often be felt. A rigid right rectus abdominus and tenderness one inch above and to the right of the umbilicus is suggestive of gall-stone trouble as in McBurney's tender spot of appendicitis.

A gall-bladder distended with bile indicates a movable stone in the cystic duct; a gall-bladder distended with clear white fluid indicates a complete obstruction of the cystic duct of long standing. When the gall-bladder is thickened and phlegmonous there is almost certainly a stone obstructing the cystic duct. When the gall-bladder is contracted, or nearly obliterated, there is usually a stone in the common duct.

SYMPTOMS AND DIAGNOSIS.

In that comparatively small region that lies between the lower border of the ribs and cartilages and a line drawn at the level of the umbilicus, are found a large proportion of the diseases that call for treatment in ordinary practice. Occupying

but a small portion of that region just around the spot where pain is mostly felt in gall-stones, we have stomach, pylorus, duodenum, gall-bladder, bile-ducts and pancreas all lying in close juxtaposition, and in the closest relationship physiologically and pathologically. To determine what particular organ is primarily attacked and in what manner, is no easy task, and not seldom the problem baffles the most experienced and skilled observer. Not that it is of no importance; it is of the utmost importance to distinguish between a gastric ulcer and an inflamed gall-bladder, an impacted or perforated bile-duct, and the different forms of obstruction at the outlet of the stomach, as the treatment in these conditions is so widely different, and a life often depends on a correct diagnosis. Further, I call attention to the importance of an early diagnosis of gall-stones, as this is a disease which is specially amenable to treatment in its early stages, but which, in its later development, occasionally defies the skill of the ablest physician or surgeon.

Pain.—It is probably because the position and character of the pain has not been carefully observed that a few years ago biliary colic was always attributed to the stretching of the ducts by the passage of a stone, while the tendency now is to regard it as mostly, if not entirely, due to inflammation and distension, with subsequent contraction of the gall-bladder. It has been found after operation that when sterilized water or other fluid is injected and the gall-bladder distended pain is produced. "The pains," says Naunyn, "usually commence in the epigastrium, and afterwards spread into both hypochondria and to the back, where they are often felt, not only to the right, but on both sides of the vertebral column. Sometimes they extend upwards to the head and neck, or downwards to the lumbar and even to the sacral region. Now and again they radiate into the upper part of the thigh and along the arms even to the finger-tips. Pain in the right shoulder is not, in my experience, by any means especially common in gall-stone colic, and is relatively much less frequent than in cases of hepatic abscess."

The point on which I insist as being of great importance in diagnosis is this: that when biliary colic is due to the passage of gall-stones the pain begins in the back, and not, as in other affections of the bladder and ducts, in the right hypochondrium. Dr. Kraus, of Carlsbad, who has had large experience in the treatment of gall-stones and himself suffered from the disease, in a short treatise published a few years ago, also insists on this point. Doubtless, however, so great is the influence of phrases recurring in our text-books, the pain of biliary colic will still continue to be

looked for only in the region of the gall-bladder, and the first stages of this disease, when treatment is of so much importance, will be overlooked or mistaken. I have known a patient treated for some months by an intelligent medical man for some spinal mischief, whose acute sufferings from gall-stones in after years an earlier diagnosis would probably have done a good deal to prevent.

One point I have observed: that sometimes during the last minute or two of an attack, when the pain suddenly ceases, and presumably the stone enters the duodenum, there is a peculiar gliding sensation a little to the right of the tenth to twelfth dorsal vertebræ. When biliary colic is due to a stone entering or traversing narrow ducts the pain begins suddenly. The patient may be sleeping soundly, or laughing or talking in happy forgetfulness of all aches and pains; in less than two minutes he is groaning in agony. The greater number of these attacks begin in the night. Kraus found in the course of one year's practice that he was called sixteen times in the day and sixty-two times in the night to relieve patients suffering from acute biliary colic. We attribute the prevalence during the night to the fact that the gall-bladder becomes distended with bile when there is a long interval between meals. The attack may last only a few minutes, and terminate in profuse vomiting. Unhappily, this is rarely the case. With occasional slight intervals due to the entrance of a stone into a wider part of the ducts the attacks generally last from four to twelve hours. I am rather inclined to believe that the pain which continues for days is due to an inflamed or distended gall-bladder, and not to the passage of stones. When a stone becomes impacted in the duct, and jaundice supervenes, there are aches and pains somewhat of a dragging character, but there is not often a continuance of the acute agony which is experienced during its direct passage.

It is by no means easy to describe the pain of an acute attack of biliary colic due to the passage of a gall-stone. Of all the pains which mortal man can suffer this is probably the most severe; women, who have borne children, have told me that the pain of child-birth is by no means so severe as that of gall-stones. A few cases have been reported where death could be attributed to nothing else than the severity of the pain. The patient lies still for a few minutes, then turns on his side, then gets on his knees, throws himself on a sofa, or rolls about on the floor. There is no particular position in which for more than a moment ease can be obtained. Contrary to what one might expect, there is little or no straining of the abdominal muscles.

It is not by the straining of the abdominal muscles that stones are expelled. The strongest man is reduced to such weakness that he is compelled to groan.

There is the pain arising from a local peritonitis associated with an inflamed or distended and contracting gall-bladder. The pain of acute biliary colic, due to the passage of gall-stones, begins, we have said, in the back. It begins suddenly, and there is a moment when it as suddenly ceases, and the patient who had been writhing in agony looks up and says, "I'm all right." Pain arising from an inflamed or distended gall-bladder rarely begins in the back, nor is its beginning or ending comprised in a moment of time. It is generally felt in the region of the gall-bladder, and is seldom so severe as that caused by the passage of the stone. Pain due to inflammation may begin in a moment, but there is no one particular moment when the pain suddenly ceases and the patient affirms with a sigh of relief that it has entirely gone.

Tenderness.—Not only during attacks of biliary colic, but in the interval between attacks, tenderness is a well-marked and most important symptom of gall-stones. Gall-stones are almost always associated with localized peritonitis, and to this the tenderness is probably for the most part due.

Though this tenderness be more or less widely diffused, its centre is always below the ninth costal cartilage, or, to put it more positively, on a line between the ninth costal cartilage and the umbilicus, but nearer the cartilage than the umbilicus. Apart from the passage of stones or unmistakable distention of the gall-bladder, there is no symptom that points more clearly to some affection of the gall-bladder or bile-ducts than tenderness at this point.

The Evacuation of Biliary Calculi.—There can, of course, be no more certain proof of the existence of stones than their being found in the motions.

Jaundice.—Though the expression, as I have already pointed out, be not uncommon even among medical men, that when there is no jaundice there can be no gall-stones, that impression is formed without calling to mind the anatomical relations of the gall-bladder and the bile-ducts. It is true that in almost all who suffer from gall-stones, one may observe a slight yellowness of the conjunctivæ, but there is by no means always well-marked jaundice. The bladder may have been packed with stones, numerous stones may have been passed; there may be stones in the cystic duct, but when there is no obstruction or pressure on the common duct, there is not necessarily jaundice, and even

when there are stones impacted in the common duct they may be of so irregular shape as to allow the passage of bile.

Fever.—It is often said that the passage of stones is accompanied with a rise of temperature. I have not found this to be the case; nor do I know any reason why there should be. Increased temperature after the passage of a catheter was at one time referred to nervous irritation; it is now referred to a septic catheter, or inflammation of the bladder or urethra. To the same cause I think we may also safely refer increased temperature during the passage of gall-stones, namely, to inflammation, or the presence of microbes in the gall-bladder or bile-ducts. There may be, and often is, shivering, but I have not observed high temperature. When, however, a stone remains a considerable time impacted in the duct, there is almost always a rise of temperature. This we can readily understand when we consider that at the same time bladder and ducts seldom escape being invaded by septic organisms or pus.

Vomiting.—Almost all who have suffered from frequent attacks of biliary colic have found these attacks accompanied at times with vomiting.

Disordered Appetite.—Unless when the patient is worn out with pain or sleeplessness, the appetite as a rule is not diminished; on the contrary, it is sometimes voracious.

General Bodily Condition.—When the attacks are frequent there is generally, but not always, loss of flesh, and especially when there has been prolonged jaundice the patient may be terribly emaciated.

CASE I.—Mrs. J., aged 76; spare, muscular woman; native of Norway. Gave history of attacks of pain over the region of the gall-bladder at intervals during past three years, which attacks were accompanied by slight jaundice. Condition when seen previous to operation: Temperature, 99; pulse, 110; complained of considerable pain and tenderness; slight jaundice and quite a perceptible tumor over region of gall-bladder. As some bile was present in the stool, it was evident that the common duct was patent; advised operation; removed to hospital; purged and placed on calcium chloride in 30-grain doses three times a day, as advised by Mayo Robson, for two days "to make the blood more plastic and to lessen the tendency to hemorrhage."

For all gall-stone operations I used the reversed Trendelenburg position. The patient is hung by straps under the arms on an inclined plane, at an angle something less than 45 degrees; a sandbag is placed under the back, so that the patient is bent over it. In this position, the intestines gravitate to the lower

part of the abdomen, so that when the liver is held up by a retractor the air sucks in between the liver and the intestines as it enters the pelvis in the Trendelenburg position. This position makes it possible to see and manipulate the gall-bladder and ducts.

The abdomen was opened in the right linea semi-lunaris. The gall-bladder was found very much distended. It was aspirated and then opened, the parts being isolated by sterilized gauze. About forty stones were removed. The cystic duct was next examined by passing the hand down beside the gall-bladder along the duct. Two or three stones were found, which were easily removed by milking the duct. The gall-bladder was next stitched to the peritoneum and aponeurotic layer, and not to the skin, as it is less liable to leave a permanent fistula. Gauze drainage was used for the first six days, when a rubber drainage tube was substituted. Patient left hospital in twenty-eight days, when a small fistula was present, which closed in the course of two months, and she is now enjoying excellent health for her years.

CASE 2.—Mr. B., aged 53; laborer in a brick-yard; jaundice intense for six months; considerable loss of flesh; very little pain and no ague-like attacks. The only suggestive symptoms were the history of intermittent pains in the upper abdomen some months previously, and a tender point at the usual spot, one inch above and to the right of the umbilicus, which enabled me to diagnose gall-stones in the common duct, and to advise operation. Operation as described in number one. Three large gall-stones removed from common duct by choledochotomy. Iodoform drain inserted over opening made in the duct, and drain removed on the second day. The stone produced was one of three removed from the common duct. Patient made good recovery and left hospital at the end of the fourth week.

CASE 3.—Mrs. C., aged 50. Extreme jaundice for three months, during which period of time all stools were clay-colored, showing an entire absence of bile; extreme weakness, headache and vertigo. A distinct tumor could be felt over the region of the gall-bladder, and quite tender on pressure. Operation in the usual manner and about forty stones removed from the gall-bladder, cystic and common duct. Patient made good recovery until the fifth day, when she suddenly felt a shortness of breath, sat upright in bed, and was dead before the house-surgeon could arrive. Patient evidently died from a pulmonary embolus.

CASE 4.—Mrs. M., Jewess, aged 29, mother of six children, no history of previous attack. Complained of very severe attack of colic and pain in back for ten days, which was only relieved

by hot fomentations over the gall bladder and back and hypodermic of morphia. On examination a distinct tumor could be felt over region of gall-bladder, which was also quite tender on pressure; temperature, 100 degrees; pulse, 120; clay-colored stools, not complete, etc.; operation similar as described in number one, with the exception that a purse-string suture of the opening into the gall-bladder was used and tightened up at the end of the tenth day. About fifty faceted stones removed from gall-bladder and cystic duct. Made a good recovery and left hospital in four weeks. No history of any recurrence.

CASE 5.—Mrs. W., aged 42; small, slender woman; mother of six children. When seen by me was of a dark brown color, the jaundice being intense, clay-colored stools, extremely offensive; quite weak, and could hardly walk about the house; complained of dizziness and headache, and friends informed me was a little delirious at night; temperature normal; pulse, 120, small and compressible; a distinct tumor could be felt over gall-bladder, which was quite tender on pressure. Diagnosed gall-stones in common duct, and advised operation. Operation as in number one; a large number of stones were removed from gall-bladder and common duct. Gall-bladder was stitched to peritoneum and aponeurotic layer; on the fifth, thirteenth and twenty-first days quite a severe hemorrhage took place from the gall-bladder, which was controlled by firmly packing the gall-bladder with plain gauze, but otherwise patient made a good recovery, and left hospital at the end of the fifth week, still having a small sinus discharging bile.

CASE 6.—Mrs. O., married, aged 38; mother of four children; very stout; complained of sudden acute attack of pain over region of gall-bladder, accompanied by vomiting and chills, with pain and tenderness over region of gall-bladder; no jaundice; operation. Gall-bladder was found distended with bile and large number of stones, indicating a movable stone in cystic duct. Operation as described in number one, but with the purse-string suture. Patient made good recovery and left hospital in three weeks.

CASES 7, 8 and 9.—All females, all had history of previous attacks, pain and tenderness over region of gall-bladder; some little jaundice, partial clay-colored stools. Operation of cholecystotomy in all three; all three of which had partial obstruction of cystic duct, with numerous stones in the gall-bladder. All recovered and left hospital between the third and fourth week.

THE SPHERE OF THE GENERAL PRACTITIONER IN THE DIAGNOSIS AND TREATMENT OF THE INSANE.*

BY G. H. MANCHESTER, M.D., NEW WESTMINSTER, B.C.
Medical Superintendent Provincial Asylum for Insane.

Mr. President and Gentlemen.—It is a common practice in the introduction of an essay, but I care not to deliver myself upon the wisdom of it, to make some sort of an apology, and in this instance I can truthfully say that no one could deal *in extenso* or even do simple justice to a subject such as I have chosen in the short time which is allotted to the reading of this paper, so that I must barely touch upon some points and leave the rest to the text-books. Further, I cannot hope, from my brief experience in the work of treating the insane, to write anything newer upon this subject than has been ably written by other alienists. I therefore acknowledge my indebtedness for many points to the recent writings of my brother specialists.

I have been requested to bring the subject of insanity before you at this meeting by means of a paper which would treat of the disease in a manner appealing to all present, and with this object in view, considering the fact that no doubt the great majority of my audience would belong to the honored ranks of the general practitioner, I decided to give attention to the insane from that point of view—of one in the daily practice of his profession as a physician.

So, placing myself in the shoes of such a one, I have asked myself, what would be the most likely problems to arise in my mind were I called upon to deal with a case of mental disorder? The answers which suggest themselves are two, firstly, as to the diagnosis, and, secondly, as to the treatment.

The importance of this subject must be very apparent to us all when we consider the fact that all insane persons in this province, as in most other places, come first to the notice of the general practitioner before they are committed to the care of the specialist, therefore it behooves us to be able to correctly diagnose insanity, and, having settled that matter, to be equally able to advise as to what should be done with the case.

The diagnosis of insanity is easy in the majority of instances. We are not in doubt when we see the noisy raving or hilarious chattering of mania, the gloom of melancholia, or the fatuous silence of dementia; but there are others where the diagnosis

*Read before British Columbia Medical Association, August 29th, 30th, 1902.

will not be so easy. It may be necessary to consider whether a man shall be placed under restraint for his own or the public safety, or to prevent him from squandering his fortune and impoverishing his family. In a number of cases we cannot wait and let time come to aid us in our decision. We have to decide then and there, and, if it is a question of placing the individual under restraint it is a matter of the utmost importance to him and his family, and of considerable importance to us. If we shirk the responsibility and leave him at large, homicide or suicide may follow, or he may be reduced to beggary while no advantage accrues. We, as general practitioners, acting in good faith, are saved the possibility in this province of being sued for damages for signing certificates of insanity to commit a patient, by a very wise provision in connection with the last Lunacy Act passed in 1897, so that there is no reason why we should hesitate to act promptly.

The cases which will present the chief difficulty in diagnosis will be those where the symptoms have come on most insidiously, and where they are really only an exaggeration of the chief characteristics of the disposition of the individual in question during that portion of his life when he was accredited with sanity and a right mind.

The higher faculties of the mind are the latest developed and the first to give way under disease. The power of restraint exercised at first over the lower impulses gradually weakens and then is lost, while with it sink all the altruistic sentiments and the higher attributes. The egoistic feelings rise in proportion to the loss of control. The patient becomes more and more selfish and indifferent to the wishes and wants of others, loses interest in the society and pursuits of his friends, soon he neglects business, and in all outward relations is an altered man.

When we turn to the origin and causation of mental disorder we see at once how much more prone are some to such rise of subject consciousness. There are many who by reason of a faulty inheritance are egoistic throughout life. Selfish at school, they are selfish when adolescent; they are selfish in their love-making and selfish in religion. The whole life and powers of some are devoted to the gaining of wealth and a trifling loss is sufficient to turn their brain. Others are suspicious and listen to every gossip's tale, embittering their lives by suspicious fancies. Others are jealous and yet others are fearful. Women, and even men, afraid of all kinds of things, and if one of these is depressed by some bodily ailment, as influenza, he straightway imagines that everyone is plotting against him. Another form of fear is

hypochondria. All these egoistic people are prone to insanity, but the diagnosis is difficult, for the insanity grows out of the inherited temperament, and it is not easy to say when the one begins and the other leaves off, or to fix the point where the normal may be said to have passed into the abnormal.

Far easier is the diagnosis when we find that instead of an exaggeration of the natural characteristics of the man a total change is observable in him. In many a certificate we read that the patient is "totally changed," and no better evidence of insanity can be adduced than such a change, if we are so circumstanced that we can mention it as a fact.

Whether the insanity be an exaggeration of the individual peculiarities or a total change of habits and character, if it only goes deep enough, we find sooner or later delusions, and these aid us much in clearing up the diagnosis, especially for the reason that they do not appear at the very commencement of the disorder, but indicate that it has existed for a certain time and proceeded to a certain depth. That is to say, for example, that mania and melancholia may both exist in mild form for a considerable time before they are marked by the presence of delusions, and during that time they are more difficult of diagnosis than afterwards.

It may be important not only to diagnose the existence of insanity, but if possible to ascertain the form we are dealing with in each case. To those general practitioners (and they seem to be in the majority) who agree that once fully developed insanity in any form is diagnosed the patient should be promptly removed to some place especially adapted to the care of such cases, it may matter little what form is present, since, so far as they are concerned, the treatment will be the same, namely, the removal of the patient. But for those who believe that certain forms are amenable to home treatment it is necessary that a fairly complete diagnosis, as well as prognosis, should be made as to the form of insanity present if they would avoid trouble, especially when a suicidal or homicidal tendency may be present. It is difficult to say just when a patient may be subject to such impulses. Some will commit suicide or attempt it when but a very moderate degree of depression is present and the friends will express the greatest surprise at their doing so. For this reason it is well to treat all cases of melancholia as suicidal and insist on the patient not being left alone even for a moment. This is most important, for it just so happens that it is usually cases of the quiet and melancholic type which the family physician will assay to treat at home. being beguiled by the fact that such patients are usually quiet and fairly tractable, and, moreover, often possess

a large proportion of their mental faculties intact, which they do not fail to use as a lever to dissuade the friends from carrying out the very measure most calculated to benefit them.

On the other hand, cases of mania are usually so obstreperous that no attempt is made to manage them at home, and there being only one place willing and able to receive such, they are promptly sent thither, and rightly, too.

Hallucinations assist in the diagnosis of insanity. These affect the senses of hearing and sight chiefly and may be present in a person who is perfectly free from insane delusions. The most common is the hearing of voices, and these cases are very incurable, generally speaking. They are often hard to detect, and where suspected may even be denied; but for these voices some cases may be in all respects sane and conduct themselves as ordinary members of society, but yet they are always to be regarded with suspicion.

One day they may control themselves and disregard the voices. The next they may feel bound to obey, no matter what the command. The inability to make sure of the presence of hallucinations may hinder very much the diagnosis and render unaccountable the conduct of the patient, but upon close observation sufficient proof will soon be obtained to satisfy one of the presence of hallucinations. However, we shall find that it is when they affect the conduct that we are chiefly concerned with them, or when they are likely to affect it; for we cannot wait until a man assaults or murders another, under the idea that he has been insulted, before taking steps to secure his and the public safety; and yet it would seem as if this is what the general public, or at least the press of this city, would advise us to do. They seem to contend that only dangerous lunatics should be placed under restraint, losing sight completely of the need for putting forth any effort to cure the mentally afflicted one who may not have violent tendencies. I have been blamed for detaining harmless patients in the asylum, but were one to have been released for any reason and commit some offence, no matter how trivial, no consideration whatever would have been shown the officer responsible for the release, so that it is evident we cannot follow out such a course as might be suggested by the *vox populi* from the unthinking abuse of whom the poor lunatic often finds the asylum a perfect haven of refuge.

Hitherto I have mentioned those forms of insanity which are characterized by the presence of delusions and hallucinations, and the large majority of insane persons have either the one or the other, or both, as the prominent symptoms of the disorder. There

are some, however, whose unsoundness of mind is shown by insane conduct rather than by insane ideas, or who, by congenital or other defect, are unable to take care of themselves or manage their estates. The first class belong to the order once known as moral lunatics. The patients, it was said, are insane, but with an apparently unimpaired state of the mental faculties.

Here, as in so many cases, there is beyond all doubt a very great dispute about words. One writer uses a word to mean a great deal, which another does not, or the latter may use the word in a totally different sense. Physicians are quite agreed that there are patients whose acts are insane, yet who have no delusions in the ordinary sense of the word. Everyone can, from his experience, call to mind such cases, but controversy exists as to the name by which they are to be designated.

The highest mental attainment which civilized man can reach is a right rule of conduct regulating the affairs of life with judgment, prudence and restraint. But if this standard is never reached, owing to congenital defect or imperfect development or training, or if the highest centres are reduced by insanity or epilepsy or alcohol, then the mind is likewise reduced from a higher to a more automatic condition. There is over-action of the lower centres from the removal of the controlling influence of the higher. Applying this to conduct, we find that the reduced brain gives way to the gratification of the senses regardless of the consequences, permits indulgence in pleasure to the detriment of self or family, may set at defiance the conventional laws of society, or, possibly, the law of the land. The patient is reduced to the level of the child, or an uneducated or untrained person, and the reduction may go on till it brings him to a level lower than that of the savage. This is no special variety. Any cause which operates injuriously upon the brain function may reduce the individual in this way. He is an altered man, he may possess a perfect memory, may be able to converse brilliantly and argue keenly. He presents no delusion or hallucination, and yet his conduct is different from what it was before. He may not be immoral; immorality is only one form of this so-called variety of insanity, but he is altered, and altered for the worse. He is wrapped up in self. The egoistic part of his mental constitution comes prominently forward, owing to the loss of the higher controlling powers. His affection and feeling for his wife, family and friends are estranged. He is extravagant or penurious. He devotes his time and money to objects he would formerly have despised, or associates with people beneath him. This will go on for a time, and then he will get worse and descend to a

lower level of delusion and more marked insanity. From this he may recover, to reach again the level of alteration, but never regain perfect sanity. He remains an altered man, altered in feelings toward those he loved best, altered in habits, character and conduct. He presents the spectacle of a half-cured patient. Nowadays, as soon as a patient is somewhat better, the friends clamor for his release from the asylum or restraint in which he has been placed; and those who have the care of the insane are prone to release patients, owing to such popular clamor, as soon as improvement reaches a certain point. Consequently, many who might have been cured by longer care and treatment are turned out to take care of themselves in the world at large, and to remain half cured for the rest of their days.

The insanity of a man or a woman in whom we can find no delusions, must be shown by his or her conduct, and in forming an opinion we must examine the case as we would any other in other branches of practice. What is the history of the individual and his relatives? Does insanity exist in his forefathers, or in other members of his family? What has been his manner of life? Has he been intemperate, has he had epileptic attacks, or apoplectic seizures? Is he altered, and, if so, how long has he shown signs of alteration, and have these increased lately? Close examination of one of these altered men may reveal to us the physical signs of a case of general paresis. Unequal pupils, fibrillary tremors of the tongue, or the peculiar dull look of the face will explain beyond doubt the nature of the change, and make a diagnosis easy which otherwise might be difficult. For the early stage of general paralysis presents in many cases a typical moral insanity. The patient makes silly purchases, boasts in a silly way, is forgetful of times and appointments, drinks more than usual, possibly indulges in immorality or theft. Yet no one act is unquestionably that of an insane man, and no one idea is palpably a delusion.

Let us now briefly consider the case where the patient is not suffering from exaltation or depression, has no particular delusions or hallucinations, but is simply mentally enfeebled or deficient. These cases are of two kinds, those whose defect is congenital or the result of arrest of development at an early age, and those who from former attacks, from coarse disease of the brain, or old age, have come to the condition which is commonly called dementia.

And, first, of those who, through congenital defect, or as the result of disease in early life, are through life deficient, not idiots, but weak-minded imbeciles, children in mind throughout life,

they come before us in various ways. Though children in mind they are often men and women in wickedness and vice, and it may be necessary to place them under restraint, or to protect their property from being squandered and themselves from being robbed. I know no class over whom controversy is more likely to arise, or where we may have greater difficulty in forming a diagnosis. They are not idiots. Many of them have acquired a fair degree of education, can construe a Greek play or master a problem in Euclid. Their memory is excellent and we cannot compare their condition with a former one—for they have never been any better—so that even this test fails us. They have no delusions or hallucinations and are not insane in the ordinary sense of the word. With regard to many there is no difficulty. When a man or woman of forty consents to be treated like a child of ten, to be taken out and amused, and to have ten cents a week pocket money, we have not much difficulty in forming an opinion. But the development of others is not so low, yet they are deficient in reason and judgment and often in conduct. There is a tendency to low and depraved habits, to brutish and sensual enjoyment, to low company, amongst whom they are of more importance, and if remonstrated with they show an absolute disregard for truth and right behavior. To this class belong, I am satisfied, many of the young men and women, and even boys and girls, who are giving our police authorities so much trouble in every town and necessitating the erection of a reformatory. They also crowd our jails and penitentiaries while in the earlier stages. This is borne out by the number which we yearly receive from the custody of these places of punishment. Invariably these cases show signs of defect and degeneracy.

In examining any such individual we must consider his conduct in regard to his environment and bringing up. What might be passed over in the lower walks of life is in the higher evidence of a degraded mental state. Every case must be judged by itself and the question must be asked, is this person able to take care of himself and his affairs? But to sign a certificate is often very difficult, as we may not ourselves witness the insane conduct, all of which we arrive at by hearsay. It is not to be forgotten, however, that imbeciles are very prone to display violent explosiveness of their nerve centres, and this is specially likely to happen as they advance from the period of puberty to adolescent life.

Last of all, there is the dementia of old age, of chronic insanity or brain disease. In the vast majority of such cases the diagnosis presents no difficulties. Loss of memory, loss of atten-

tion, the mere oblivion and childishness, enable us to say that such a person is unable to take care of himself or his affairs, and never will be able.

Coming now to the matter of treatment, I would say first of all, that without exception alienists agree and statistics prove that early removal from the scenes and surroundings which were present during the onset of the attack is essentially the primary step in the treatment of insanity, either fully developed or incipient, where circumstances will at all permit of such a change. If you pick up the report of any institution for the care of the insane nowadays you will observe a table dealing with the results of the year, which will read about as follows:

“Percentage of recoveries on admissions, anywhere from 25 to 45. Of those recovered about 50 per cent. were admitted during the first month of the attack, and fully 75 per cent. were admitted within the first three months, whereas those who were kept at home up to a year and more showed no recovery, or, at best, a very insignificant percentage.”

Insanity in this respect is just like any other disorder, if neglected it will deepen and grow more confirmed and the prospect of recovery will pass with the days until none is left in a very short time. Therefore, prompt action is indicated.

I do not think that the neglect of treatment in the early stages is often due to tentative action on the part of the physician, but is more due to the ignorant concealment of the case upon the part of the family, acting under the wretchedly false sentiment of the day, that to have a case of insanity in the family is a terrible disgrace. The friends in these cases do not wish wilfully to throw away the patient's prospects of recovery, quite the reverse, I feel sure; but they expect that in some mysterious way nature will rise equal to the occasion and bring about a return to the normal, and so she will, if possible; but they give her no chance, and so matters go on until some overt action brings the unfortunate within the clutch of the law and then the whole thing is ventilated before the public and much sorrow and hardship results to all concerned. Such cases very frequently settle down into hopeless dementia after reaching the asylum at last.

Some of you may not agree with this plan of early removal, holding that where at all possible an attempt should be made to treat the patient at home first with a view to preventing the unfortunate odium being attached to him, which seems to be the unavoidable result even in this enlightened age where a man has been once certificated insane. Certainly this seems a very laudable object to be achieved, but the results are not encouraging, as shown by statistics.

If you will consider for a few brief moments, I think that you will see how much the disadvantages of trying to treat a patient of this kind at his home outweigh the single advantage which we have already mentioned. Think of the great risks to be run both by the patient himself and his family. The great scarcity of reliable attendants, the unsuitability of the appliances at home, the scandal if the neighbors get to know and talk of the matter, for the average person is afraid of his life of a person who is insane, no matter how well he knew the individual before. I could go on indefinitely, but I don't think it necessary, as you can read of these things in any of your text-books on insanity. It all points to early removal, and therefore I would impress the wisdom of it upon you. Neglect of this rule has led to disastrous results right in this city within a very few months past. On the other hand, I fail to know of a single instance where real injury has resulted from following this principle.

The next point is, where is he to be removed to? Removal does not mean the asylum essentially, it may be that the patient will have means to follow out any course that is advised, in which case the seaside, or the mountain, or the country, may fill the requirements. In short, a good general holiday without fatigue of any kind at some resort—better there than at the home of relatives, except under very exceptional circumstances. This is, however, only suitable for the earliest cases, and when farther advanced it may be necessary to choose a place where restraint can be used. I don't mean mechanical restraint, but simply the restraint of being under the supervision and direction of others who are competent to perform that office. But failing the means, and in the case of fully nine-tenths of your cases, you will find that there is no other place for them but the Government institution maintained for that work to which they can go, and surely to such cases it is a veritable refuge and haven of rest, and when well conducted leaves little to be desired for their welfare.

When it has been decided that the patient must be removed to the hospital for the insane it devolves upon the physician to advise as to how this is to be carried out, and just here I would like to make a few remarks upon my own account.

It may surprise you to know that owing to the—shall I say—carelessness displayed in making out certificates of insanity in this province fully half of the insane committed here are committed upon papers that would not be accepted in many other provinces because of flaws which they contain. I do not mean that the medical men make all these errors, but they are responsible for a fair share, and should be able not only to avoid them,

but to direct the other officials how to avoid making errors in their forms.

There is no other province in the Dominion or State in the Union where it is so easy to commit a patient to the state institution as here, and therefore I think that many of these errors are inexcusable. A common fault is to send a patient along with only the medical certificate. Now, no patient is committed by the medical certificate only, but these are for the guidance of the magistrate or justice of the peace who signs the form that does authorize the committal. There are four forms required under ordinary circumstances. Form "A" is an order which is made out by a magistrate or judge, or even a justice of the peace. There are two forms "B," which are the medical certificates and are made out by two medical men who are not partners and are not related to the patient. Then there is form "C," which is supposed to be made out by some one who has knowledge of the patient and his antecedents. This is the form that is most important of all to the medical staff of the receiving institution and, strange to say, it is the one that is most constantly neglected. There must certainly be an idea abroad that it is quite sufficient to give any answer to the questions there put, but I pray you endeavor when it comes to your notice again to secure the most correct and reliable information possible for this form, remembering that in so doing you are promoting the advancement of science, because it is from these forms, to a large extent, that statistics are drawn, upon which we make inferences that direct us in this most important branch of the medical science.

There is, however, a class of patients for whom the general practitioner can do much, and in many instances successfully prevent from falling into a complete state of insanity and being committed to the asylum. Close observation is necessary to detect those early symptoms of threatening insanity which occur in a large number of women during the years of child-bearing, women who have suffered in difficult labors from lacerations and other complications which have served to bring on some abnormal pelvic condition which keeps up a continual irritation of the nervous system and prevents a natural return to health after each puerperium. Perhaps no outward physical signs may be manifested; the patient may not have even dysmenorrhœa or complain of any pelvic trouble, but you must suspect it and advise, even urge, the necessity of a thorough examination which should invariably be performed under an anesthetic.

The chief symptoms of these cases will be mental. A gradual,

and to the friends unaccountable, alteration of disposition takes place, and for the worse invariably. Perhaps a change from an even-tempered and tidy housewife to a scold and a slovenly shirk, from a kind mother to an irritable and peevish one. In a vast majority of cases you will be able to locate the cause of the trouble and remove it, which certainly should be done without loss of valuable time. The results in these cases will be very gratifying.

Outside of the lines already indicated by the above I do not believe that the general practitioner can do much to treat insane persons whose insanity has become fully developed and well marked, but there is a field which he undoubtedly possesses most distinctly as the family physician, and that is in the prophylactic treatment of those persons both young and middle-aged who are predisposed to mental trouble and can only be kept from an open attack by the most careful management and supervision. With a view to pointing out what may be done in this line let us now turn our attention to the prevention of insanity.

Statistics show that the number of patients in every asylum in every civilized land is increasing every year. That insanity is on the increase is the only logical conclusion that we can arrive at. It would appear that the environment in which we live is becoming more and more complex, and that there must be a corresponding complexity of brain centres and functions with more and more instability and liability to disorder and deterioration. I know that this view has been called pessimistic and that there are some who deny that there is any increase of complexity and who point to brilliant men who live and are well in spite of hard brain-work. This does not, in my opinion, disprove my position, but only shows that the strong and naturally selected escape the dangers which overwhelm the weak, who by natural inheritance and less fortunate environment succumb to nervous disorder. I shall come back to this part of my subject presently, when I speak of the rearing and training of those who are threatened with nerve and mind trouble. I wish first to say something about the great cause of insanity—hereditary taint.

There is no need for me to argue before an audience like this upon the existence of such a cause of insanity or to raise any question as to the transmission of the disease by inheritance. Few medical men, even of those whose practice does not extend amongst the insane, can pass many years without its being brought under their notice. Young persons of both sexes break down, we know not why. The parents may assign this or that as a reason, but they are consciously or unconsciously keeping back

the true cause. The patients are too young to have acquired insanity. They have not been exposed to the changes and chances of life. They have not known the cares and anxieties of poverty and the condition of those who have to support a family on very small means; they have not failed in business or been disappointed in their ambition, neither have they taken to drinking. Their insanity is idiopathic, constitutional, derived from their forefathers, for insanity is inherited, not only from insane parents, but may come from those who are afflicted with other nervous disorders, as epilepsy or dipsomania, and along with insanity we find in a family the disorders which I have named and all the series of neuroses with which you are familiar. Statistics of inherited insanity we do not possess, but we are driven to the information we get from the relatives of patients, and our own knowledge and observations. The facts imparted by friends are prone to be very untrustworthy. That insanity exists in a family is denied with the most unblushing boldness. I recall a case where a young man aged about nineteen was admitted to the asylum at New Westminster whose father filled out the answer to the question bearing on heredity in our forms with a total denial of any knowledge of such a thing and I was at a loss to understand how such a case could have broken into the family, for it proved to be a case of dementia precox or precocious dementia, a form we hear much about nowadays in our journals on insanity, and a form in which heredity plays an essential part. After the boy had been with us for over a year and the father had visited him a good many times, also other members of the family, I observed that the mother never came and I never heard anything of her. Finally one day both parents came and visited the patient, but being busy I paid no particular heed until my chief attendant came to tell me that the father had finished the visit and that he could not induce the mother to leave the boy or the premises, and asked me what was to be done. I went to see what the difficulty was and at once discovered in the mother a case of pronounced delusional insanity of many years' standing, so I was then able to see why the son had collapsed as he had done on the threshold of adolescence.

We may roughly divide insanity into that which is inherited and that which is acquired; but no one cause of acquired insanity at all equals heredity as a producer of mental disorder. If we could stamp out all the insanity which owes its origin to inherited instability, we should have gone a long way towards the extirpation of insanity as a whole, for a great deal of the mental breakdown which is apparently acquired is due to hereditary

weakness. A large amount may be acquired through alcoholic indulgence, but if we closely examine the cases where alcohol is the exciting cause, in how many we find hereditary predisposition. And so we might go on and multiply instances *ad infinitum*. But if we are to save the race from gradual mental decay and raise up a strong and vigorous breed of healthy men and women, it is absolutely necessary that more attention shall be paid than has been hitherto to the selection of the individuals who are to marry and reproduce. If men and women were race-horses, or short-horns or greyhounds, their breeding would be regulated, and all diseased or faulty stock would be carefully eliminated, and all inbreeding would be, as a matter of course, avoided; but being what we are, thinking only of ourselves, and our own self-gratification, and nothing of the future race, we arrange our own unions and nobody has the right, or the power, or the courage to prevent us, when we have attained to years of discretion, namely, at twenty-one years of age. One of the States, I have recently observed, has instituted legislation looking to the remedy of this trouble and the experiment will no doubt be very closely observed by the world at large. Let us hope that it will prove so successful that all civilized countries may be induced to follow the example and provide some way to prevent the union of persons mentally unfit.

We can only hope to achieve this by education and continual ventilation of the subject and exposure of the evils arising from its neglect, public opinion may in course of time be directed towards it and people will be forced to look upon the act of giving birth to a mentally deficient child as a cruel sin. Whatever difficulties we may experience in advising about the marriage of those in whose family insanity exists, there will be much less when we are consulted about men or women who have already had an attack of the disorder. When the individual is a girl we are at once confronted with the popular and prevalent idea that marriage is a cure and sovereign remedy for such disturbance, and advisers, even medical, say to the parents, "get her married." They think this will cure any remnants of the past attack and be a certain preventative of any in future. Our advice on the subject is often taken but seldom obeyed. The attack will be concealed from the knowledge of the other party if this is possible, or will be minimized and spoken of as nervous or hysterical, or it will be denied altogether. I hold a strong opinion that people who have been insane ought never to marry, that they ought not to inflict on their partner for life the anxiety, and even danger of another attack. No one who has had one attack of insanity can be pronounced

free from the risk of another. Insanity is a disease which confers no immunity on its victims like some we have to treat. On the contrary, each attack, if there be more than one adds to the liability to succeeding ones, in this respect following the example of its congeners, such as epilepsy and neuralgia; and besides, the risk and danger to the partner in the marriage there is the question of offspring. In this there is far greater danger for the woman than for the man, for the former has to face the periods of pregnancy, or parturition and lactation, and what numbers we see break down after childbirth who, had they remained single, might have led a happy and useful life.

Patients and their friends, when recovery takes place from an attack of insanity, fondly imagine and flatter themselves that they will never have another. They rake up some little circumstance which they think was the cause and argue that it will not occur again. And if they ask us our opinion on the subject, it is not easy for a physician to say to one just convalescent, and rejoicing in the return of reason and hopeful of the future, it is not easy to say to such a one, "You will break down again; you will be as bad as you have been lately and you should shape your life with this idea always present in your mind." It would be thought very hard and injudicious and unkind were we to say this, so we let our patient go and make him or her happy. Nevertheless we ought to advise that no marriage should take place, and set before the friends the risks thereof.

People with this tainted inheritance do, however, marry without advice, very often in spite of it; and when married they break down, recover perhaps, and break down again. The wife may have puerperal mania at one or more of her confinements. Now holding the opinion that I do as to the necessity of preventing inherited insanity, I must say that in my judgment people that have had attacks of this disorder ought to have no more children. What can be more lamentable than to see a woman break down in child-bed, recover, break down again with the next child, and so on for six or more times, the recovery between each being less and less until she is almost a chronic maniac. I have known this to occur many times, and perhaps you have had similar experiences. For the sake of the mother and the father, to say nothing of the children, there ought to be an end of their begetting when insanity follows the birth. The same applies to the case of the men also, but the risk is certainly less.

After hereditary transmission there is probably no cause of insanity which exercises so potent an influence as alcoholic drink-

ing. A large proportion of the patients in the local asylum owe their malady to this. So long as drinking remains as it is, it will be impossible to say that insanity is diminishing. The spread of temperance principles, the advance of education, the improved sanitation of dwellings and workshops, and the influence of wholesome recreation upon the mind as well as the body must, we hope, gradually check the drinking that prevails.

From time to time we may be consulted about the bringing up of threatened children, children of parents in whose family insanity exists, or who have themselves been insane. If the insanity is on the mother's side the child should have a wet nurse, for good nourishment is essential. Its sleep should be carefully watched, and as much as possible procured. It should sleep by day as well as by night until it attains the age of five or six. Nervous children should be protected from all that terrify, such as servants' tales of ghosts, robbers, bogies, and policemen. Parents often know little of what goes on in the nursery, and children may even be taught habits of self-abuse by nurses to keep them quiet. Parents' treatment may be equally injudicious. They may spoil at one time by indulgence, and frighten at another by intemperate noise and quarrels. They may dose them with religion until the children loathe it, or else become the veriest little hypocrites. The egoistic nature of those who inherit the insane diathesis ought to be kept in view by whoever has to train them. A delicate child may require much watching and care. It is easy to foster this selfishness and much caution should be observed. Such a child ought to be taught to consider his playmates and companions first, to share his toys and luxuries, to be kind and considerate to servants and animals. Cruelty to the latter is a frequent concomitant of a weak mind. School, even at an early age, is a benefit to such children, for by it they are taken away from the injudicious spoiling of home. They have to obey orders, observe proper hours and learn discipline and regularity, all which may possibly be novelties to them. There are two sorts of children about whom we may be consulted, the dull and backward, and the preternaturally sharp and precocious. The first need not be an idiot at all, but simply backward and slow of development. He requires special tuition and it is useless to place him in a class of boys of the same age and expect him to do the same lessons and compete on the same terms. Still worse is it to punish an unfortunate boy of this type and set him down as lazy or idle, or to cane him as obstinate. The education must be fitted to the capacity and the teacher should discover whether such a child has a special aptitude for some branch of knowledge

or art which will often indicate the proper sphere of activity for him through life.

Children who are predisposed should not be subjected to narrow or fanatical views of religion. Self, self introspection, the perpetual consideration of self, are among the characteristics of incipient insanity, and to encourage all this is manifestly the worst thing that can be done.

Another thing to be guarded against is the habit of self-abuse. This is one of the most prevalent evils to be found to-day among the young people, and there can be no doubt that while many learn the practice and carry it on secretly for years without any marked ill-results the majority who delight in the practice belong to the very class of children which we have been considering, and it is in this class that it produces its worst effects. To aggravate matters we find those quack advertisers in the papers which picture in most unhealthy detail the terrible end to which such victims are hurrying unless they immediately send money for the advertised remedy. This preys upon the mind of the awakened youth and often caps the climax, bringing to a head a threatened attack of insanity which might otherwise have been averted. I think that all such boys should be circumcised early; the measure is a good hygienic one and can do no possible harm, whereas it may be the means of saving the mental integrity. In an inveterate masturbator it is, however, no use to circumcise and only moral suasion can have any effect.

The question is, should children be warned against this evil? On this medical men differ. My own view is that they should in a very judicious manner, and by the schoolmaster. It would be a good thing if all boys and girls with hereditary predisposition were brought up to abstain totally from alcohol, it will be less trouble to make total abstainers of them than to have them moderate drinkers, and they should be given to understand why abstinence is enforced if they wish to know. The same applies to the use of tobacco, which in such persons is almost invariably used to excess.

One may even be asked to advise regarding the choosing of an occupation for some young man of this type who has safely passed through the perils of childhood and puberty and is entering upon adolescence. It is more easy to point out what to avoid than what to choose, and amongst the former would be professions and services where severe and searching examinations have to be encountered. An outdoor life with the least possible amount of worry, responsibility and likelihood of financial loss is the kind most suitable, and for that reason all branches of agriculture

and stock-raising suit these young men. Moreover, it is very important that every man should have beyond his everyday work some amusement, pursuit, or occupation, or hobby—call it what you will—which shall be a relief to him after his daily task. How often do we hear of a man in business breaking down in health and find that he had no thought for anything apart from his business, going early and returning late, taking only sufficient time to scan over the newspaper, and never taking a holiday.

Of occupations suited to neurotic women I can say but little, but that which so many wish to take up in the present day, namely, nursing, is most unsuitable. Nursing is for the strong—bodily and mentally. It involves great anxiety and responsibility, great fatigue and loss of sleep, and is the last calling which the predisposed should follow.

Can a man or woman do anything to prevent insanity? This is a question sometimes put, more frequently, however, with reference to the prevention of a recurrence in those who have already suffered an attack. In many the insanity occurs at so early an age, and is so manifestly due to heredity, that it is to be feared that no advice that we can give will enable the individual to escape. Nevertheless, the direction to be followed is not hard to point out. It is important that a man or woman should correct, as far as in them lies, the tendency to egoism, self-consciousness, and selfishness which so often ends in insanity. They should adjust themselves to their surroundings, should not live for themselves, but feel sympathy for others, and help and defend them. This may be difficult for a man to do who has never done it hitherto. It is less difficult to train a child in this direction. All children should be so guided, and especially those predisposed to neurotic disorder. One has seen such at school, eccentric boys who are peculiar in their dress and ways, but possibly clever in some things. They are rarely gregarious. They live for the most part solitary lives, just as do the insane. It would be an advantage to have enforced games at a public school to put a check thereby on the solitary wanderings of such boys, and for a time at any rate, have them to congregate with their fellows.

While more could be added to this paper with distinct advantage, I feel that I have already overtaxed your patience; so, trusting that you may have been interested in at least some points brought forward, I will conclude, thanking you for your kind attention.

CANCER OF THE BREAST.*

BY O. M. JONES, F.R.C.S., VICTORIA, B.C.

The choice of a subject for these meetings is a difficult matter, but in my opinion it should be upon some surgical subject that the profession at large is interested in. In this province there are few if any men who do any sort of original work, as the appliances and facilities are not within one's reach if one felt so inclined. The best a man can do is to give his impressions as the result of his experience upon the treatment of certain diseases by certain methods.

Scirrhus Cancer of the Breast is the subject I have chosen, and although my experience is limited, still, certain points have been so strongly impressed upon my mind by the cases which have fallen under my care, and those I have seen under the care of others, that I have decided to choose this for my paper.

Cancer, judging from all the recent statistics in this and other countries, is certainly on the increase; and so much so that at last institutions, purely for the investigation of the cause of the disease, are being organized in several countries. My impression is, that cancer is very prevalent in this province; at all times there are cases of cancer at the hospitals under treatment by my colleagues or myself.

Whether or not locality has anything to do with cancer, we have no positive proof. It was pointed out thirty or more years ago that the disease is more prevalent in districts where the subsoil is clay and the country damp. That may be a reason for its prevalence in this country.

Removal of the breast is an operation which requires thorough and careful removal of all the structures which are likely to be affected. Unfortunately, we do not always see the case until the disease is far advanced. This is often due to the patient, who has a horror of any lump she discovers in the breast being cancer; in other cases due to the medical practitioner, who waits for development—otherwise for more marked signs. It is while the disease is in its early stages, and confined to the breast—often free from pain—that operation gives such excellent results.

Jacobson, in his "Operative Surgery," lays down a rule that every practitioner should bear in mind and carry out, which is: "When in doubt as to whether a persisting lump which he is examining is carcinoma in its first and quiescent stage or indura-

* Read before British Columbia Medical Association, August 29th, 30th, 1902.

tion, or a deeply-lying cyst with thick walls, the attending practitioner should consider it his duty to have the lump excised at once and the breast dealt with as may prove necessary. . . ."

The value of this rule has been well illustrated in three of the cases which have come under my care. The discovery was accidental in two of the cases; the lump was deep in the breast, free from the skin or underlying structures, and painless. An incision into the lump revealed its character—which was scirrhus, and therefore the whole breast was removed and the steps of the radical operation completed.

In the other case the tumor was small; appeared movable; but the patient often felt a lancinating pain in the breast. There was no retraction of the nipple or implication of the skin over the situation of the swelling. The pig-skin appearance of the skin, described by Sir S. M. Banks as a very valuable sign, was not apparent.

In all these cases it was impossible to feel any glandular enlargement. When the deeper steps of the operation were being carried out a smaller chain of infected glands was readily seen beneath the lesser pectoral muscle.

Watson Cheyne says that: "In exploratory operation the suspected swelling should be excised, along with an area of healthy tissue around, and it should be cut into after its removal from the body, and not in the vicinity of the operation. The hands should be well washed before proceeding further with the operation, and a fresh knife should be procured if you decide to proceed with the operation."

The reason for this is that, as we well know, minute portions of the growth, if left in the field of the operation, may grow.

It is impossible to be sure of the character of these small tumors. They may be mistaken for chronic mastitis, or a chronic deep-seated abscess, a small fibro-adenoma, or a small, simple cyst. The only sure and simple way of deciding is to cut into them and see what they are.

Early diagnosis, early and complete operation, is the greatest advance we have made to permanently cure cancer. This applies not only to cancer of the breast, but to cancer of the cervix, or of any other part of the body. Waiting until the symptoms are well developed is one of the most frequent causes of delay in operation. Even up to the present day many of the older practitioners of medicine carry out the same principle in peritonitis due to appendicitis, or to any other cause. If one waits for the cancerous cachexia, nipple retraction, pain, and enlarged axillary glands, it is then too late to hope for any benefit from a surgical operation.

Exploratory operation is not popular, but state the patient's condition to the friends, and proceed if you think it looks cancerous.

In studying the history of my cases, history of traumatism seems to be present in practically all of them. In two out of the twelve cases there was a history of heredity, one of the patients having lost two sisters with cancer, the other having lost an aunt and a brother. In one, severe shock and grief was the cause attributed.

A valuable physical sign brought into prominence of recent years is the leucocytosis. The red blood corpuscles are diminished, the white corpuscles are increased three or four times, and the hemoglobin diminished four-fifths. It is said that this sign is present to a more or less degree in the very early stage of the disease. The other physical signs of a well-marked case are so familiar to all that I shall not take up your time in even enumerating them.

We know that cancer of the breast is most common in women—and especially between the age of forty and fifty, and more frequently in married women—80 per cent.

As to the etiology of cancer, we are as far away as ever from knowing the true cause of the origin of the disease. The following are given as causes: Irritation or injuries; cancer is rare in warm climates, but common in valleys and along banks of rivers that overflow. In the elevated dry country, where the soil is dry, and of limestone formation, it is said to be less prevalent. Again, certain houses called "cancer-houses"—members of different families inhabiting these houses have been victims of cancer. Cancer areas are the areas where the people are best nourished. rich and abundant food undoubtedly tends to increase the mortality. Cancer, I am told, is prevalent in Australia, due, in a great measure, it is supposed, to the large consumption of beef. Cancer is rare in Africa among the natives, and much more common among the whites when they live better.

One of my old professors used to say that he often found cancer develop in a patient after a great nervous shock. The reason for this may be that it renders the person more liable to be attacked by the micro-organisms on account of lowered vitality.

The parasitic and infective views of cancer have so far not been supported by experiments. All attempts to procure a micro-organism from fresh cancerous growths have been unsuccessful. These cultivated germs injected into animals have not given rise to cancer. Some attribute it to blasto-mycetes, or the yeast-plant (Russell); Ruffer to parasite or psorosperm. These are looked upon by some as being degenerative changes in the cells.

Of late years the manner of performing the operation for removal of the breast, and the results obtained, are so vastly improved upon the results obtained by the old operation that the removal of the breast for early cancer is looked upon as an almost sure cure. Although the severity of the operation has increased, the mortality is very low. Records of a hundred and more cases have been published without a single death. The duration of life in untreated cases of cancer is about three years; while in operative cases it is common for patients to live ten, fifteen or more years; from 40 to 50 per cent. of the patients operated upon have lived over three years without recurrence. The three-year limit is admitted by Volkman, and by most surgeons, to be a cure. This question of time limit has given rise to very heated discussions, and surgeons of repute have said that we cannot promise a cure in any case of cancer. Fresh outbreaks of the disease locally, in the bones, or viscera, may occur at any period up to ten or fifteen years after the operation.

After the modern, more extensive operation, the patient lives longer and external recurrences should be rare if all the tissues which may be the seat of the disease are completely removed.

Many of us here recollect seeing removal of the breast for scirrhus done in a most inadequate fashion, the incision just clear of the implicated skin, and only a portion of the breast containing the lump excised. No cleaning out of the axilla or anything else; therefore, a recurrence in three months was not uncommon. By degrees, the details of the operation were gradually improved upon; a larger area of skin was removed; then, the whole breast was removed; then, the fascia over the large pectoral muscle, and, where glands could be felt enlarged, the axilla was imperfectly cleared out with the fingers. To-day, all these methods would rightly be considered most imperfect. Anything short of clearing out every tissue that can be affected by the cancer is an incomplete operation.

The modern, or Halstead's, operation consists in the free removal of the skin over the whole breast, removal of the deep fascia of both pectoral muscles, the axillary glands and fat of the axilla. We will discuss the first step of the operation, that is, the skin incision: Halstead removes the skin covering the breast itself, in fact, almost follows the line of the breast, or even wide of the circumference of the breast gland. Watson Cheyne, on the other hand, removes at least two inches wide of the growth. The incision is continued down the inside of the arm for its upper one-third, etc. Particular attention should be paid to the removal of the skin that has the ligamenta suspensoria of Astley Cooper

—the fibrous septa that fix the gland to the skin attached to it, as these ligaments contain breast-tissue and lymphatics. Lobules of the gland are attached to the pectoral fascia, which makes it clear that it should always be removed. The close and continuous relation of these different structures demonstrates the uselessness of superficial operations and the necessity for thorough and radical operation.

Mr. Styles' method of ascertaining the limits of the gland-structure by means of nitric acid is most useful. It is rapid and can be completed while the operation is progressing. I first saw this carried out when witnessing an operation on the breast at Guy's Hospital during my last visit there. From this we see that removal of the whole breast-gland is absolutely imperative.

The next step of the operation, the removal of the sternal portion of the pectoralis major and the pectoralis minor, has been very much disputed. Sir W. M. Banks says it is unnecessary in all cases: cancer does not occur in the pectoral muscle, and again, seldom occurs in the interval between the muscles. Halstead removes all the sternal portion of the pectoralis muscle, together with the fascia over it and under it, and the pectoralis minor. Watson Cheyne removes the costo-sternal portion of the pectoralis major and pectoralis minor, and pulls the pectoralis minor up out of the way. He says that the removal of the costo-sternal portion affords more room for manipulation.

One of the great objections to the operation is the supposed uselessness of the arm after the loss of the muscles. This is really not the case, because the patient has a very free use of the arm even after the loss of these muscles. In fact, in all my patients in which Halstead's operation has been carried out it has given rise to very little inconvenience. If the muscles are preserved and the fat and glands of the axilla are dissected out, the nerve supply of the pectoral muscles is generally removed with it. The necessity for cleaning out the axilla in every case, when nothing can be felt, was well illustrated by the cases I previously mentioned. In each of these a small chain of hard glands was discovered lying over the axillary vessels.

Halstead, again, lays great stress upon the removal of the disease in one place, lest the wound becomes infected by division of the cancerous tissues, and because in a piecemeal extirpation portions may be left. The glands on the pectoral side of the axillary vessels run up to the anterior triangle, those on the posterior aspect to the posterior triangle.

Comparing the results of the different operations, the most radical operation—Halstead's—gives the most satisfactory

results. It does most to prevent early local recurrence. In a table contained in Jacobson's "Operative Surgery," Banks has 29 per cent., Cheyne 18 per cent., Halstead 9 per cent. Out of eleven cases I have records of, ranging from 11 years to 1 year (11, 7, 5, 5, 4, 2, 1) four of my patients died, living on an average between nine and sixteen months.

The Halstead operation was not carried out in the first two cases, but the pectoral fascia was carefully dissected away and the surface of the pectoralis major muscle freely removed. By retracting the muscles I was able to remove the fascia glands and fat from the axillary space and between the muscles.

In cases where the glands in the posterior triangle of the neck are affected, a cure is hopeless, and an operation is rightly considered unjustifiable. Such was one of the fatal cases I have included in my list. An operation had been performed by the attending practitioner, in which no attempt had been made to either clean the fascia over the muscles, or the fat and glands out of the axilla. He remarked to the patient's husband that the glands were unaffected and the chances of a cure good.

The extensive nature of the incision and the free removal of the skin frequently make it difficult to bring the edges of the wound together. This I have been able to overcome by undermining the skin for several inches away from the incision and in addition to this making relaxing incisions parallel to the original one. When the operation has been aseptically performed it is astonishing what an amount of tension the skin will stand without the sutures tearing through.

In cases where it is impossible to bring the edges of the skin together, Thiersch's skin-grafting soon covers over the wound.

Amputation at the shoulder-joint—Berger's—is scarcely to be recommended and rarely practised except by some very enthusiastic, and reckless young surgeons.

Oophorectomy and thyroid extract in inoperable cases have been abandoned as unsatisfactory. From recent reports, the X-rays have undoubtedly exerted a beneficial effect on the growth when situated immediately under the skin. Sanguine supporters of this method have suggested the application of X-rays to every case immediately following excision, with the idea of sterilizing or destroying any fractions or minute particles of the growth that may be overlooked by the surgeon.

When the cancer is quite small, some operators are content with a small or imperfect operation, thinking that a more thorough operation can be done if it recurs. This sort of surgery deprives the patient of her only and real chance of cure.

The point I wish to lay most stress upon is that the radical operation should be carried out in every case of scirrhus, however early or however small the growth may be, because the treatment of recurrent disease is most unsatisfactory. In the words of Watson Cheyne, "the patient's only chance lies in the first operation."

TUBERCULOSIS—BRITISH COLUMBIA LEGISLATION.

BY CHARLES J. FAGAN, VICTORIA, B.C.

Secretary of the Provincial Board of Health of British Columbia.

That insidious disease which we call consumption, phthisis or tuberculosis of the lungs, is the most terrible destroyer of lives with which civilization has to contend. Within the last few years science has shown the nature of the disease and has clearly demonstrated its cause, how it flourishes and spreads, how it declines and disappears. It seems to me then, the time has now arrived when it becomes the duty of all sanitary authorities to assume a more aggressive attitude. It was this feeling that influenced me to put forward the Regulations lately adopted by this Board for the prevention of the spread of tuberculosis.

It may not be amiss, in order to bring out more forcibly the immediate necessity of adopting these Regulations, to recount some of the known and now generally-accepted facts regarding the nature of this disease. The disease known as tuberculosis may attack any organ or tissue in the body. When it affects the lungs it is called pulmonary tuberculosis, or consumption.

In this form it causes about one-sixth of all the deaths occurring in the human race, and omitting the deaths among children up to fifteen years and adults after sixty, we find it causes about a quarter of all deaths, so that its ravages are most deadly at a period when the life of an individual is most useful. The death roll from tuberculosis in Canada has exceeded nine thousand every year for the past three or four years. In the United States it has exceeded one hundred thousand, truly a terrible showing, when one knows, as we now know, that consumption can be prevented.

It has been proved beyond doubt that a living germ called the tubercle bacillus is the cause, and the only cause, of tuberculosis. When these germs find their way into the body they multiply there; if conditions are favorable for their growth, they produce new growths or nodules (tubercles) which tend to soften. The discharges from the softened tubercles, containing

the living germs, are thrown off from the body in various ways. In pulmonary tuberculosis the expectoration discharges contain the germs, often in enormous numbers. It has been proved that in the course of twenty-four hours, many millions of tubercle bacilli may be discharged under certain conditions by one person suffering from tuberculosis. The germs thus thrown off do not grow outside the living body except under artificial conditions, but they may and often do retain their vitality and virulence for long periods. As tuberculosis can only result from the action of these germs, it follows, from what has been said, that when the disease is acquired it must be acquired from receiving into the body the living germs that have come from some other human being or animal affected with the disease, in other words, it cannot occur except by *direct communication* from some other individual or animal suffering from tuberculosis. While the meat and milk of tubercular cattle may be important sources of danger, yet the disease as a rule is acquired through its communication direct from man to man.

The expectoration of tubercular persons frequently lodges in places where it afterwards dries, as on handkerchiefs, clothing, carpets, floors, sidewalks or vehicles. After drying, it is very apt in one way or another to become pulverized, and then, by means of wind, trailing skirts or other causes, it floats in the air as dust.

Pulmonary tuberculosis is usually produced by breathing air in which the living germs are suspended as dust or attached to dust; such dust may retain for weeks, or even months, or longer, its power of causing the disease. It should be distinctly understood that the element of danger is the dried and pulverized sputum, and *not* the breath of tubercular patients or the moist sputum received into proper cups. The breath and moist sputum are practically free from danger, because the germs are not dislodged from the moist surface. The act of coughing or speaking may expel particles containing infective matter. If all discharges were destroyed at the time of their exit, by far the greatest danger of communication from man to man would be removed.

It is a well-known fact that some persons, and especially the members of some families, are particularly liable to tuberculosis. So marked and so frequent is the development of the disease in certain families that the affection has long been considered hereditary. We now know that the disease itself is not hereditary, but that there is inherited certain constitutional weaknesses which render the individual a more easy prey to the germs, once they have gained an entrance.

Where the parents are affected with tuberculosis, the children, from the earliest moment of life, are exposed to the disease under the most favorable conditions for its transmission; for not only is the dust of the house likely to contain the bacilli, but the relation between parents and children, especially between mother and child, are of that close and intimate nature especially favorable for transmission by direct contact.

The frequent occurrence of several cases of consumption in a family is, then, not to be explained on the supposition that the disease itself has been inherited, but that it has been produced after birth by transmission direct from some other individual.

It follows, from what has been said, that tuberculosis is a *communicable* disease and, further, that it is *preventable*. If it is preventable, the natural question to ask is: Why is it not prevented? It is not prevented because of the indifference of the public. It is difficult to root out old ideas, and it is still more difficult to get a people to adopt precautions against an evil which, although so fatal in its ultimate results, does not strike the public mind with the startling suddenness effected by the appearance of cholera, small-pox or diphtheria. If our fashionable dames, heads of families, institutions and industrial concerns, together with the poor consumptive, would all do their duty to their neighbors, the spectre of tuberculosis would gradually disappear, and with it much suffering and misery.

To sum up, then, we find the following as accepted facts:

1. Consumption is caused *only* by a germ which comes from the living, affected with consumption.
2. Consumption is preventable, because, for practical purposes, the great source of infection—the spit—can be easily disinfected or destroyed. Remove the spit or sputum as a source of infection, and consumption must go far towards disappearing.
3. Consumption is not hereditary, nor is it easily contracted if reasonable care be taken.
4. The careless consumptive patient is a focus of infection and a danger to all persons who come much in proximity to him or visit the places he frequents.

I beg to append suggestions which, if strictly followed, will materially aid towards stamping out consumption.

SANATORIA.

The open-air treatment of consumptives and those who are threatened with tuberculous disease has given much better results than any other. The earlier the treatment is begun the more

likely is there to be a favorable result. Open-air treatment, excellent though it may be, is not enough; the exercise and the food are necessary adjuncts and each must be under expert supervision. Therefore, sanatorium treatment is almost a necessity.

Sanatoria, like ordinary hospitals, although they may be endowed by the Government, must principally look to the public for support. I am convinced we have in British Columbia a climate as favorable to the successful treatment of consumption as any in the world, still we are without a sanatorium. I hope this will soon be remedied.

RULES FOR PATIENT.

Two facts should encourage the patient:

1. That there is always an intrinsic tendency to recovery in the earlier stages of the disease, and that, under modern treatment, a large percentage of cases do recover.

2. That there is no reason for any person to think that he is doomed by heredity, no matter what his family history may be.

Disposal of Sputum:--

(a) Pressed paper spit cups, costing but little, are on the market (Henderson Bros., Victoria and Vancouver). One or several can be used daily, and after it has been used, each cup with cover and contents can be burned.

(b) Paper cups held in a metal frame may be used.

(c) Metal or porcelain spit cups or spittoons, each containing a small quantity of disinfecting solution, 1, 2 or 3, may be used.

It must be remembered that the disinfecting fluid cannot thoroughly disinfect, because it cannot reach all parts of the sputum.

The final disposal of the sputum may be:

1. By cremation when possible.
2. Pouring down water closet when sewer connection obtains.
3. Fill spittoon or cup with *boiling* water, cover and let stand till cool.
4. By setting cup or spittoon aside, preferably in a warm place, so that the disinfectant may act eight or twelve hours longer. In such case the quantity of disinfecting solution should be in excess of that of the sputum; then bury or otherwise dis-

pose of it so that flies or any domestic animals cannot reach it. Wash cup or spittoon in *boiling* water, and then with soap and water, or, preferably, put into water and boil for some time (boiling water will kill consumptive germs almost immediately, but it would be safer to boil for ten minutes, so that sputum may be disintegrated and exposed to the heat). The patient should have two spit cups for alternate use. A cover should exclude flies. Cleaning can be done with washing soda and boiling water, or soap and hot water.

5. When away from his home, the patient may spit into Japanese paper napkins or paper handkerchiefs (Henderson Bros. have supply). After one use it must be put in rubber tobacco pouch until it can be burned, or, preferably, burned at once.

6. Spitting into handkerchiefs should be avoided. If forced to do this, the handkerchief should be boiled before the sputum dries. Handkerchiefs upon which the sputum is allowed to dry surround the user and his friends with infection, infect the pocket and everything else they touch, and lessen the patient's chances of recovering (it must be borne in mind that an infected person can be re-infected many times, and so hasten the end).

After coughing or spitting, the lips should not be wiped with the handkerchief used for the nose. The lips should be wiped with paper napkins, to be burned at once or folded up, so that the contact side is within, and treated as if it contained the sputum.

Repress cough as much as possible; cough gently with mouth closed as much as possible, or hold paper napkin before mouth and then treat it as infected. Never swallow the sputum; by so doing you favor the extension of the disease to the intestinal tract.

Do not soil personal or bed clothing with the sputum, nor the hands when avoidable; disinfect at once when such occurs in solution 1, 2 or 3.

Male patients who wear a moustache or beard should keep it closely clipped, and should disinfect with solution immediately on soiling; wash hands and lips frequently.

Do not infect immediate surroundings of home, or spit upon grass or hay, or anywhere else where sputum can be eaten by cattle or other animals or chickens.

Finally, let the patient ever remember that filth, foul air and darkness are the friends of the germs, that sunlight, fresh air and cleanliness are their worst enemies.

RULES FOR ATTENDANTS.

The floors, woodwork and furniture of rooms in which consumptive patients stay should be wiped with a damp cloth, not dusted or swept in the dry way.

Clothing may be disinfected by boiling. Rooms may be disinfected with formaldehyde fumigation (large doses), supplemented with the washing of floor and woodwork with solution 5. This should be done every few weeks when practicable, while the rooms are occupied by the patient. If the floor or other surfaces are accidentally soiled with sputum, the spots should be wet and rubbed thoroughly with solution 5 or 1, 2 or 3.

Rooms for consumptives should not have fixed carpets. A few rugs may replace them; these should be frequently carried to the open air and exposed to the action of direct sunshine for several hours at a time. For thorough disinfection of them, steam is the best. The tableware of the patient, the knife, fork, cup, and particularly spoons, should be kept separate and washed by themselves in scalding water.

In addition to the danger from infectious dust, if it is allowed to be diffused through the air, there are other possible ways of communicating the infection: it may be carried directly to the mouth by the fingers, or indirectly by handling articles of food. After soiling the hands, cleanse them carefully and disinfect in solution 1, 2 or 3. Guard against inoculating cuts or abrasions with sputum.

RULES FOR EVERYBODY.

(a) Anything tending to lower the tone of the general health may act as a predisposing cause—insufficient nourishment, overwork, loss of sleep, worry, close and dusty air. Avoid these. Give sleeping rooms a prolonged airing and sunning during the day, and as much night ventilation as is practicable. The dwelling-place should be dry naturally or made so artificially. If it is thought that there is a family predisposition to consumption, an outdoor occupation should be chosen. Live in the open air and sunshine as much as possible.

(b) Every new case of tuberculosis comes from some earlier case. The germs of this disease retain their vitality and their infectivity a long time under favorable conditions. Therefore, do not bring into your house clothing formerly used by consumptives, unless it has been thoroughly disinfected; do not allow your wives and daughters to risk infecting your home with

dresses that have wiped up the sidewalks. Do not move into an infected house or rooms until the thoroughness of the disinfection is unquestionable; do not put to your lips or mouth, pipes, wind instruments, money, or anything else that has been used or handled by consumptives; do not buy bread, milk or other articles of food not to be cooked, from consumptives. Kissing, particularly lip to lip, is unsafe, if one party is tuberculous.

By observing the rules which are expressed and suggested in the foregoing, the principal, if not all danger of infection may be avoided.

DISINFECTING SOLUTIONS.

Solution 1.

Carbolic acid (pure liquefied)	7 ounces.
Water	1 gallon.
	Mix.

This is about a five per cent. solution.

Solution 2.

Lysol	5 ounces.
Water	1 gallon.
	Mix.

Many colors are changed by this solution.

Solution 3.

Solutol (cresol in an excess of sodium creosote) ..	½ pint.
Water	2 gallons.
	Mix.

This is a very efficient disinfectant for excreta, tuberculous sputum, etc.

Solution 4.

Formalin	6 ounces.
Water	1 gallon.
	Mix.

This mixture contains a little less than two per cent. of formaldehyde.

Solution 5.

Corrosive sublimate.....	60 grains.
Water	1 gallon.
	Mix.

Label "poison." This is about one in a thousand solution; should only be used for woodwork; destroys metal and gilding; must be kept in wood, glass or earthenware. This is about the best of all disinfectants, but is unsuitable for tuberculous sputum as it coagulates albuminous matter.

It is a good plan to dissolve four or five tablespoonfuls of common salt in each quart of solutions 1 and 2, thereby increasing considerably the disinfecting power of the solution.

Steam:

Steam disinfection can be carried out on a small scale in the common tin wash boiler, by supporting a false bottom or floor of laths or thin boards above the water with two bricks, or otherwise. One hour steaming is necessary.

NOTE.—The Attorney-General directs me to announce that the Government Bacteriological Laboratory is at the disposal of all sufferers. Therefore, persons suspected to be suffering from tuberculosis can have their sputum examined at the laboratory free of charge. The early morning sputum should be sent in small, wide-necked, clean, dry bottles, and well corked, together with a full history of the case. It is preferable to act through your doctor.

Victoria, November 26th, 1901.

*Regulations of the Provincial Board of Health of British Columbia,
approved by His Honor the Lieutenant-Governor in Council,
dated November 14th, 1901*

Whereas tuberculosis is now proved to be infectious, and is at the present time existing in many parts of the Province, the Provincial Board of Health enacts the following regulations:

NOTIFICATION.

1. Whenever any physician knows or suspects that any person whom he is called upon to visit is infected with or has died of tuberculosis, he shall immediately notify the Medical Health Officer, and give an account of the condition of patient and state what precautions are being taken to prevent infection.

2. Whenever any householder knows or suspects that any person within his family or household has tuberculosis, he shall immediately give notice to the Medical Health Officer.

3. Whenever any teacher in any school has reason to suspect that any pupil is suffering from tuberculosis, he shall notify the Medical Health Officer immediately, and may prevent the attendance of such pupil until medical evidence is produced that such pupil is not suffering from tuberculosis, or any form likely to be infectious.

4. Whenever any Superintendent, or person in charge of any hospital—public or private—asylum, gaol, orphanage, “home,”

convent, or private school, knows or suspects that any inmate of such hospital, asylum, gaol, orphanage, "home," convent, or private school, is suffering from tuberculosis in any form, he shall immediately notify the Medical Health Officer.

5. In Municipalities or Districts where no Medical Health Officer has been appointed, notification should be sent to the Secretary of the Provincial Board of Health.

MEDICAL HEALTH OFFICER.

6. "Medical Health Officer" shall mean and include the Medical Health Officer appointed under the provisions of the "Health Act," to act within the limits of the jurisdiction of any Local Board of Health District.

7. The Medical Health Officer shall, within forty-eight hours, give notice in writing to the Secretary of the Provincial Board of Health of every case of tuberculosis reported to him, and shall state as nearly as possible the condition of patient, and what precautions are being taken to prevent infection.

8. In case the Medical Health Officer is not satisfied with the report of the physician in charge, he may demand a fuller report, and in the event of his still being dissatisfied he shall visit the patient and satisfy himself that all necessary precautions are being carried out.

9. In case where the Medical Health Officer and attending physician disagree as to precautionary measures, the matter shall be referred to the Provincial Board of Health for final settlement.

10. Whenever a case is reported as not being under the charge of a physician the Medical Health Officer shall forthwith visit such case and instruct the patient as to necessary precautions against general and self infection.

11. Whenever the Medical Health Officer or the physician in charge considers that a house or any part of a house is infected with tuberculosis, he shall order said house or part of house to be disinfected, in accordance with instructions issued by the Provincial Board of Health.

12. In all cases of death from tuberculosis the rooms or house occupied by deceased shall be disinfected to the satisfaction of the Medical Health Officer, or the Secretary of the Provincial Board of Health or his deputy.

13. Whenever a case of tuberculosis is reported from a hotel or boarding-house, the Medical Health Officer shall visit the patient while residing in said hotel or boarding-house once a

week, or as often as the Secretary of the Provincial Board of Health may direct.

SPITTING IN PUBLIC.

14. Inasmuch as spitting is purely a matter of habit, and is offensive to many, and is often very harmful and a fruitful means of carrying disease, it is hereby declared unlawful to spit in trams, railway cars, or other public conveyances, or on sidewalks, or on floors and other parts of public buildings.

TUBERCULOUS MILK.

15. Inasmuch as tuberculous milk is a most fruitful source of consumption, it is hereby declared unlawful for any person to sell milk unless he has a certificate, of a date not later than six months, from the Provincial Veterinary Surgeon that the cows from which such milk comes are free from tuberculosis. Such certificate may be demanded by any customer, or Medical Health Officer, Sanitary Inspector, Secretary of the Provincial Board of Health or his deputy.

DISINFECTION.

16. Whenever it appears necessary or advisable to the Medical Health Officer to have any house, hotel, boarding-house, hall, theatre, car, railway car or other public conveyances disinfected, he may order same to be done and at the expense of the owners.

PENALTIES.

17. Any person who violates any provision of these regulations shall be liable, upon summary conviction before any Police or Stipendiary Magistrate, or before any two Justices of the Peace, for every such offence, to a fine not exceeding one hundred dollars, with or without costs, or to imprisonment, with or without hard labor, for a term not exceeding six months, or to both fine and imprisonment in the discretion of the convicting Court.

CHARLES J. FAGAN, *Secretary.*

AN UNUSUAL CASE OF UMBILICAL HERNIA.*

BY ERNEST A. HALL, VICTORIA, B.C.

Mrs. C., aged 58; weight, — lbs.; mother of — children. At birth of fourth child, some twenty-eight years ago, she noticed a bulging at the umbilicus. This increased until it became the size of a child's head. There was no pain nor inconvenience except from the enlargement itself. Some six years ago the mass increased in size and became the seat of occasional colicky pain. I examined the patient at this time and found the mass irreducible, but as there were no indications of strangulation, and as I did not consider the patient a first-class subject for surgical procedures, being subject to chronic bronchitis, I advised against operation.

When again called I found the hernia double its former size and the seat of severe intermittent pain, with absence of gurgling except at one point. The patient had vomited and hiccupped occasionally. I concluded to operate at once, Drs. Fraser, Hart, Hasell and Gibbs assisting. We found dense omental and peritoneal adhesions, the sack was with difficulty freed. Within the sack, which was but two and a half inches across the neck, were the great omentum, the greater part of the small intestine, the cecum, appendix, ascending, transverse, and the descending colon to the sigmoid flexure. The circulation had not apparently been interfered with. The abdomen was closed with tier suture. Recovery was uneventful save some sloughing of the skin that had been stretched and thinned, and probably bruised by the operation.

Umbilical hernia in the adult, as distinct from post-operative ventral hernia, is a somewhat unusual condition, and occurs almost wholly in short, fat women who have borne children. Possibly the constant intra-abdominal pressure, owing to the accumulation of fat causes atrophy of the abdominal muscles, with a consequent weakening of the fascia. It is highly probable that many of these cases are grafted upon a congenital umbilical or para-umbilical hernia that remained undetected until the increased pressure of pregnancy or labor forced a mass of fat-laden omentum, which would slowly enlarge through the growth of the lipomatous mass, thus stretching the opening until under additional pressure more of the contents of the abdomen were forced within the ever-yielding sack.

*Reported before British Columbia Medical Association, Aug. 29th, 30th, 1902.

Reports of Societies

BRITISH COLUMBIA MEDICAL ASSOCIATION.

The third annual meeting of the British Columbia Medical Association was held in Vancouver, August 29th and 30th, 1902.

The first session was called to order at 11 a.m., August 29th, the President, Dr. R. E. Walker, in the chair.

There were present Drs. Walker, Boggs, Manchester, Drew, Doherty and Stanier, all of New Westminster; Drs. O. M. Jones, Helmcken, Frank Hall, Ernest Hall, Fagan, all of Victoria; Drs. McGuigan, Pearson, Burnett, D. H. Wilson, Monro, Brydone-Jack, Thos. Wilson, L. N. MacKechnie, McPhillips, Underhill, Boyle, Campbell, Carroll, Tunstall, Young, Riggs, Jeffs, Mills, Poole, Stevenson, all of Vancouver; Dr. Ross, of Alberni; Dr. Gordon, of Phoenix; Dr. Patterson, of Extension.

In addition to the above, the following visitors attended: Dr. E. C. Dudley, of Chicago; Dr. Ross, of Illinois; Dr. Willis, of Seattle; Dr. Templeton, of North Carolina; Dr. Harrison and Dr. McInnes, of Vancouver.

The minutes of the previous meeting were read and adopted. Applications for membership were received from Dr. Boucher (Phoenix), Dr. E. Hall (Victoria), Drs. Doherty and Stanier (New Westminster), Dr. Ross (Alberni), which, being favorably reported upon, were granted upon the motion of Drs. Fagan and Monro.

Dr. Underhill, chairman of the Local Committee on Arrangements, reported upon the various entertainments provided for the members.

The Secretary, Dr. Pearson, presented a copy of the agreement *re* Fees for Life Insurance Examination, whereby the signatories pledged themselves to accept no lower remuneration than \$5.00. The agreement had been largely signed throughout the province.

The action of the Executive was endorsed and a copy of the agreement ordered to be placed in minutes. Dr. Fagan, Victoria, brought up the question of the Canadian Medical Protective Association and a resolution approving of this society and strongly recommending all British Columbia practitioners to join it was passed. After a little further detail business the society adjourned for luncheon.

The meeting convened again at 2.30 with a good attendance. The President proceeded to deliver his annual address. At the conclusion of the address Dr. Frank Hall, Victoria, was called upon for his paper on "Gall Stones." (See page 243.)

In the discussion which followed the reading of this paper Dr. E. Hall, Victoria, spoke of the causation of gall stones, referring to one case where some silk ligatures left over from some former operation formed a nucleus around which the concretion was deposited. He asked Dr. Manchester, Superintendent of Asylum, New Westminster, if there were an connection between gall stones and melancholia.

Dr. Manchester, in reply, said he was not aware of any such relation, but thought that possibly melancholia might, by its sedentary habits, predispose to gall stones.

Dr. Boyle, Vancouver, referred to a patient under his care, a lady who during an attack of typhoid fever developed a painful swelling over the region of the gall bladder. An operation was done under local anesthesia, the gall bladder stitched to the skin, and when opened it was found full of pus and containing numerous stones. The woman recovered from the operation, recovered from the attack of typhoid, but retained a persistent sinus until her death, some years later. The liability of these sinuses was nowadays leading many operators to remove the gall bladder entirely.

Dr. E. C. Dudley, Chicago, congratulated the author upon having grasped the principles underlying gall stones and the operations for them. While hearing the paper his mind had gone back to his first case, some twenty or twenty-five years ago, when operating upon a woman about forty years of age, he had found a gall bladder full of mucus and containing 196 stones. The gall bladder had been stitched in the wound and the woman had recovered from the operation. But there had remained a constant persistent annoying sinus, which exists to this day.

Dr. William Null, of Rochester, who had great experience in this branch of surgery, does not remove the gall bladder, but instead, removes by dissection its mucous lining. In many instances he is able to peel it off the thickened walls intact without opening, except, of course, the orifice of the cystic duct. The remainder of the bladder is then stitched to the abdominal wall and drained. This is an excellent operation and has given good results. The speaker considered that there was a great future before biliary surgery.

Dr. Frank Hall, in reply, said that he had never performed excision of the gall bladder in the living subject, but did not consider it a difficult thing to do on the cadaver.

The next paper on the list was by Dr. G. H. Manchester, Superintendent of the Asylum at New Westminster, on "The General Practitioner and Insanity." (See page 253.)

At the close of the paper, which was listened to with unusual interest, Dr. Ernest Hall, Victoria, mentioned that he had examined 102 insane women and had found but ten in whom the pelvic organs were normal. He was of opinion that so urgent is the necessity of gynecological treatment of the insane that he would have a psychopathic hospital in every municipality and a commission of doctors appointed to attend them. In all operations which he performs on insane women he always sterilizes them.

Dr. Dudley, Chicago, spoke on the relations of gynecological disorders to insanity. He had many insane women brought to him for operation with the idea of curing the insanity, but the number of women who have been thus cured is very small. Nevertheless, he thought that all insane women who required treatment should have it. He ventured to state that insanity in many cases cures disease of the reproductive organs; it was well known that a large percentage of insane women suffered from amenorrhea, associated in many cases with atrophy of the organs. Pathology is physiology modified by disease, and the atrophy which arrests the physiological activity arrested in many instances the pathological processes. Thus nature has taken care to protect the insane women by arresting menstruation and preventing reproduction. He asked the reader of the paper to solve a hypothetical problem: A woman of neurotic heredity, had borne three children; after each confinement an attack of mania followed; recovered from each time with increasing difficulty. She is again pregnant, and earnestly desires her physician to produce abortion. What should the doctor do?

Dr. Manchester, in reply to the previous speakers, said that it seemed to be generally accepted by most alienists that pelvic disease did not play a great part in the etiology of insanity. He said that amenorrhea was present in the majority of insane women, and as the patient gets well menstruation returns. As regards the question asked, he should feel strongly tempted to remove the fetus before three months; if later than this, he should leave it.

Following this paper Dr. Poole, Vancouver, presented a case of sarcoma of the lower jaw in a boy of seventeen, which, being unfavorable for operation, had been treated by the X-ray. For two months it had remained almost stationary, and then slowly and gradually disappeared. The doctor referred to Wil-

liam Allen Pusey, of Chicago, and his work in this connection, which appeared in the *Journal of the American Medical Association*, January 18th, 1902.

Dr. Glen Campbell, Vancouver, also showed two cases of congenital syphilis recovering from interstitial keratitis. One case presented typical Hutchinson teeth.

The meeting adjourned at 6 p.m.

The evening session assembled at 8.30 p.m., when Dr. Dudley, Professor of Gynecology in the Northwestern University Medical School, Chicago, was called upon to deliver his address. The speaker took as his subject the question of "How to Reduce the Mortality of Abdominal Operations," and after apologizing to the meeting for the unprepared state of his lecture said: This subject of how to reduce the mortality of abdominal operations, I am speaking now of gynecological operations, has been much in my mind during the last few years. The mortality at present in the best hands runs about 4 to 5 per cent., and it ought to be reduced still more. Now, let us take one thousand cases of operation with, say, forty-five deaths. Of these forty-five deaths perhaps twenty-five, or about one-half, will occur in cases of acute pelvic suppuration present at the time of operation. In acute infection, where the virulence of the microbes produces a toxemia which literally overwhelms the patient, swamping the whole system, this sort of thing will account for about one-half the deaths of abdominal operations. Of the remainder there will be, say ten in which the patients will die from some heart or kidney lesion occurring either separately or in combination, which may or may not have been suspected prior to the operation. Of the others, say five will die of secondary hemorrhage—this will happen with the best and most careful operators once in a while. Everything appears to be dry and clean when the wound is sewn up, but a ligature slips and in a few hours the patient is in a very serious condition. The remaining five will die from unknown causes, which, perhaps, cannot be determined even at an autopsy.

Now, the question is, how many of these forty-five deaths might be avoided?

Looking back to our twenty-five cases, which occur as the result of acute infection, I think that many of these should be excluded from operation. There are many instances when the patient is practically moribund and in whom the abdomen is opened as a last resort; the operation is done, say on Monday morning, and by Tuesday night the patient is dead. Now, if in many of these cases, instead of opening the abdomen with its

attendant shock, we were to content ourselves with simple incision into the posterior fornix of the vagina and drainage, the result would undoubtedly be better. In some instances it may only temporarily relieve, and our abdominal operation may have to be done later, but not infrequently such a vaginal incision will be sufficient to permanently cure. Thus, in these twenty-five cases one-half the mortality of abdominal operations may be avoided at once.

As regards those patients who, presenting themselves for operation, may be found to have a lesion of the heart or kidney, or of both together, this undoubtedly affects the prognosis most unfavorably and renders the operation extremely hazardous. All this should be explained to the patient, and in the case of a uterine myoma, for instance, it may be pointed out that the operation is more dangerous than the disease. Thus ten more cases may be thrown out, leaving ten unavoidable, that is, five who die from secondary hemorrhage and five who die from unknown causes, and the mortality drops right away from 5 to 1 per cent.

What is being done now by conservative men to limit the mortality in abdominal surgery? Three things:

1. Rubber gloves. I adopted these about two years ago, beginning first to use them in easy cases, using the bare hands in the most difficult. After I had practised thus for two or three months I was able to use them in all cases without feeling my sense of touch at all impaired. Before I began to use rubber gloves I thought, like many other people, that I was quite able to sterilize my hands, but since I have used them my mortality has decreased. The point I wish to emphasize is: it is quite essential that the hands should be sterilized as usual before putting on the rubber gloves, as they may be torn or punched during the operation, and the wound contaminated. As regards affecting one's dexterity, I believe that if a man says he cannot use rubber gloves because they affect his dexterity, he writes himself down as not being a very dexterous operator.

2. In the old days a great many raw surfaces were left in the abdominal cavity which served as excellent culture media for infectious material and also produced adhesions, and generally gave rise to no end of trouble. The mortality under this method of operating is four or five times greater than when the raw surfaces are carefully covered up, and all operations should be carefully performed with this end in view.

(The lecturer illustrated on the blackboard the advance in the methods of dealing with the raw edges of the broad ligaments after removal of the appendages: (a) Leaving it quite raw,

ligating the arteries; (b) putting two ligatures around the ovarian artery and uniting the anterior and posterior folds of the ligament together on each side by a whip-stitch; (c) lately Dr. Dudley has been modifying this operation, catching up either raw end of the severed broad ligament with forceps, holding both folds together he places a tenaculum in the middle between the forceps and pulls down on the tenaculum and up on both sides of the forceps, thus converting the incision from a horizontal to a vertical one, in which position it is now sutured. This method has the advantages of effectually covering in all raw ends and at the same time of effectually shortening the broad ligaments. After having explained this method diagrammatically the lecturer proceeded to state the third precaution which careful operators were taking to decrease their mortality.)

3. About fifteen or twenty years ago I was over in Birmingham and saw a good deal of Mr. Lawson Tait's operating and greatly admired his wonderful dexterity. In fact, I consider that he was quite the most dexterous man in pelvic operations I have ever seen. He used to laugh at the idea of antisepsis, but I used to notice that he always washed his hands before the operation, and that he always had his instruments carefully cleaned, and that he took care not to let anybody else's hands get into the wound. Moreover, he always used to operate through a very small incision, and I consider that by these steps, especially his rapidity of operating and the small incision, he attained much the same end as we do with our more careful cleaning. Now, when Lawson Tait had finished an abdominal operation he would flood the peritoneal cavity with gallons of water and wash it thoroughly well out. When I returned to America, and for some years afterwards, I used to do the same thing, always washing out the abdomen with sterilized saline solution. I continued this practice until one day I met a man who never washed out the abdomen, and as my results were no better than his I dropped it for several years. Now, however, I have begun to use it again. Prof. John T. Clarke, of Philadelphia, some time ago did a series of experiment on some dogs. One lot of dogs were taken, the peritoneum opened, a virulent culture of microbes introduced and the abdomen closed. Practically every dog died. On another series the same operation was performed, but normal saline solution was introduced at the same time and left in the abdomen; about four-fifths of those dogs lived. Another series was taken and the same operation done, but before closing the wound the abdomen was flushed out thoroughly with saline solution and some was left inside. Nearly every dog so treated

lived. So that my practice to-day is, after every abdominal operation, to flush the cavity well out and to leave it full of solution when it is sutured up. In a very short time this is all absorbed, and I find that patients thus treated have a much more comfortable time. Generally, the first thing a patient says after coming out of the anesthetic is, "Oh, for a drink of water," for he is consumed with an intense, raging thirst. But after leaving the abdomen full of water we do not find this thirst; there is also less nausea, the pulse is softer, and as to shock, there is nothing more astonishing than the way the pulse improves at the end of a long operation when the saline solution is introduced into the abdomen.

Since I have been especially observing these three precautions, I may say that in St. Luke's Hospital, Chicago, where I send most of my private cases, during the last eighteen months I have not had a death. Possibly there may have been an element of luck in this, and certainly I never expect to go for so long a period again without a death, but still much, I think, must be attributed to the precautions taken, and especially to the use of rubber gloves, avoidance of raw surfaces in the abdomen and the flushing and filling of the peritoneal cavity with warm, sterilized saline solution.

Dr. Dudley resumed his seat amidst prolonged applause, and Dr. Brydone-Jack, Vancouver, moved, seconded by Dr. D. H. Wilson, Vancouver, a vote of thanks, which was tendered to him by the president.

Dr. R. C. Boyle, Vancouver, read a paper on "Uterine Displacements." The speaker dealt exclusively with the retro-displacements and prolapsus. He discussed the causes immediate and contributory to these conditions, their diagnosis, and the means of treatment at our disposal. Of the operative measures in retro-deviations, the speaker preferred the Alexander-Adams' operation of shortening the round ligaments over those of vaginal or ventro-fixation. For prolapsus, repair of perineum and of cervix, if necessary, treatment of the endometritis, etc., might answer if the patient were young, or suspension might be resorted to.

Dr. Ernest Hall, Victoria, in the discussion which followed, said that he had had good results from vaginal fixation when there was no descent of the organs, but preferred to open the abdomen and ventrally suspend the uterus.

Dr. Dudley, Chicago, congratulated the author of the paper. For his part he prefers ventro-fixation, fastening the posterior part of the fundus to the anterior abdominal

wall. Many of his cases had been pregnant since, but he had not heard of any dystocia. Thinks the results of the Alexander operation are wanting in permanency and that it is apt to draw the uterus forward into territory which it ought not to occupy. He does not care for vaginal fixation, which only corrects the displacement and does not relieve the always-present descent.

After Dr. Boyle had replied the meeting closed at 10.30 p.m.

Convening on Saturday morning, August 30th, at 10 o'clock, the president in the chair, Dr. O. M. Jones, Victoria, read his paper on "Cancer of the Breast." (See page 270.)

Discussing the paper, Dr. Walker, New Westminster, said he thought that Halstead's operation was the only one giving a chance of permanent cure. He had been much struck with the small disability resulting from the removal of the pectoral muscles.

Dr. Willis, Seattle, said that cancer seemed to be the one disease in which surgery was not really up to date. He suggested that the key-note of the operation should be "work wide of the mark." He believed in the removal of the pectoral muscles, which, after all, did not seem to limit the after use of the arm. He is a user of rubber gloves in these cases, and if there has seemed to be a chance of infection he simply changes them. Has seen benefit from the X-rays, especially in recurrent cases, in which it seems more useful, and looks forward with confidence to this method of treatment.

Dr. Ernest Hall, Victoria, referred to one case in which he did an apparently very complete operation, removal of muscles, axillary glands, large skin area, etc., which yet recurred in three months, nor did long exposure under the X-rays have the slightest effect on the recurrence.

Dr. Dudley, Chicago, said that he felt scarcely competent to discuss this paper. He believed, however, that there was no operation in surgery which so many men quite unable to do so felt competent to undertake. Referring to the reader of the paper having noted "shock, fright, traumatism, etc.," as possible causes of cancer of the breast, he related a case occurring a few years ago on which he was called to give evidence as to whether severe shock—in this instance caused by the falling of a large icicle—was competent to produce a fibro-myoma of the uterus, or was contributory thereto. His testimony was that all we knew about the histo-genesis of uterine myoma was that they sprang from a certain layer of uterine tissues, and as to their causation we knew absolutely nothing at all. References were then produced from half-forgotten treatises to the effect that these tumors might be caused by such things as shock, traumatism, etc., and

he begged to find fault with the reader of the paper for lending his name to an assertion which he did not really believe, and which might be made use of in a similar case as the one he had just related.

Dr. Jones, Victoria, in reply, said that he had only referred to shock, traumatism, etc., as contributory causes, which, lowering the state of general nutrition, might predispose to cancer.

Dr. W. J. McGuigan opened a discussion on tuberculosis, with especial reference to the instructions issued by the Provincial Board of Health of British Columbia, but owing to the press of other business this discussion was adjourned until the next meeting. (See page 276.)

On the motion of Dr. Walker, seconded by Dr. Helmcken, it was resolved to invite the Canadian Medical Association to hold the regular meeting in 1904 on the Pacific coast.

Dr. Tunstall, Vancouver; Dr. Fagan, Victoria, and Dr. Brydone-Jack, Vancouver, were appointed, with power to add to their number, as a Provisional Committee to lay a statement of ways and means before the next meeting of the British Columbia Medical Association in 1903.

It was decided to hold the next meeting in Victoria.

At the election of officers the following gentlemen were chosen: President, Dr. O. M. Jones, Victoria; Vice-President, Dr. A. P. Proctor, Kamloops; Treasurer, Dr. J. D. Helmcken, Victoria; Secretary, Dr. J. C. Fagan, Victoria.

The meeting then adjourned.

In the evening a dinner was tendered to the members of the Association and visitors by the local Medical Society. Some twenty-five guests sat down to the excellent fare provided by the management of the Hotel Badminton. When the tables were cleared "the feast of reason and the flow of soul" made the hours intervening before the midnight seem all too short. Amid much eloquence the speech of Dr. Templeton, of Raleigh, North Carolina, was by common consent voted as of the highest order. Commencing by a reference to that mystical anecdote of the Governors of North and South Carolina, wit, kindly humor and pathos, commingled with rhetorical flights of no mean order, composed a speech punctuated with the laughter and applause of the delighted guests.

At the close of the proceedings the National Anthem was sung, and out of compliment to our welcome visitors from across the line, "Yankee Doodle" and "Dixie."

OREGON STATE MEDICAL SOCIETY.

The new officers of the Oregon State Medical Society, elected September 11th, 1902, are as follows: President, Dr. Henry Waldo Coe, Portland; First Vice-President, Dr. F. W. Van Dyke, Grant's Pass; Second Vice-President, Dr. J. A. Geisendorfer, The Dalles; Third Vice-President, Dr. J. P. Tamiesie, Hillsboro; Secretary, Dr. A. D. Mackenzie, Portland; Treasurer, Dr. Mae Cardwell, Portland; Councillors, Dr. W. J. May, Baker City; Dr. J. Fulton, Astoria; Dr. Wm. Ames, Portland; Dr. G. F. Wilson, Portland; Dr. C. S. White, Cervais; S. T. Linklater, Hillsboro; Dr. W. T. Williamson, Salem; Dr. W. House, Pendleton; Dr. Ellis, Portland; H. C. Coffey, Portland.

MEDICAL COUNCIL OF THE YUKON TERRITORY.

The election of members for Medical Council of the Yukon Territory, Canada, took place in July last. The following members of the council were elected officers: President, Dr. D. MacLeod; Vice-President, Dr. Barrett; Registrar and Secretary, Dr. A. E. Edwards; Executive Committee, Drs. Barrett, Sutherland and Aford Thompson, with president and registrar as *ex-officio* members.

Desiring to make a practical, useful journal for the General Practitioner,
the Editors respectfully solicit Clinical Reports from subscribers and others.

DOMINION MEDICAL MONTHLY

AND ONTARIO MEDICAL JOURNAL

EDITORS:

GRAHAM CHAMBERS, B.A., M.B. WALTER McKEOWN, B.A., M.D.

ASSOCIATE EDITOR:

GEORGE ELLIOTT, M.D.

*Address all communications to the Publishers, THE HESBITT PUBLISHING COMPANY, Limited,
44 Adelaide Street West, Toronto, Canada.*

VOL. XIX.

TORONTO, NOVEMBER, 1902.

No. 5.

THE BRITISH COLUMBIA MEDICAL ASSOCIATION.

In the present issue of this Journal we publish the papers and a report of the recent meeting of the above association kindly furnished us by the Secretary, Dr. J. M. Pearson, Vancouver. We regret that through accidental loss on the way to the printer we are unable to include therein the Presidential Address, which was delivered by Dr. R. E. Walker, of New Westminster. It is only three years since this Association was formed, and already it has given to the Canadian medical literature some able and highly instructive material. The eminent abdominal surgeon and gynecologist of Chicago, Dr. E. C. Dudley, was present, and his address before the Association, which is embodied in the Report of the Proceedings, appears to have been greatly appreciated by the members. A quite practical paper was presented by Dr. O. M. Jones, whose work is favorably known in Eastern Canada. Anyone reading Dr. Frank Hall's paper on "Gall Stones" will be struck by the thorough grasp the writer has on this subject, which in the last five or six years has been so prominently engaging the

attention of abdominal surgeons. Dr. Manchester's contribution, "The Sphere of the General Practitioner in the Diagnosis and Treatment of the Insane," is an able presentation of a subject sadly neglected by the general practitioner.

The British Columbia Medical Association has extended an invitation to the Canadian Medical Association to meet in their province in 1904. Already many in the East are looking forward to this 'cross-continent trip, and our professional brethren in British Columbia should send down next year to London a large delegation to continue the "growing time" in the national organization.

Physicians' Library

The International Text-Book of Surgery. In two volumes. By American and British Authors. Edited by J. COLLINS WARREN, M.D., LL.D., F.R.C.S. (Hon.), Professor of Surgery, Harvard Medical School; and A. PEARCE GOULD, M.S., F.R.C.S., of London, England. Second Edition, thoroughly revised and enlarged. Vol. I. General and Operative Surgery. Royal octavo of 965 pages, with 461 illustrations, and 9 full-paged colored lithographic plates. Vol. II. Special or Regional Surgery. Royal octavo of 1,122 pages, with 499 illustrations, and 8 full-paged colored lithographic plates. Philadelphia and London: W. B. Saunders & Co. 1902. Cloth. \$5.00 net; sheep or half morocco, \$6.00 net. Toronto: J. A. Carveth & Co., Canadian Agents.

In planning this work the editors and co-workers have kept constantly in mind the needs of both student and practitioner. The result—a masterly exposition of the art and science of surgery, untrammelled by antiquated traditions. In its realization they have given to medical literature an invaluable text-book, embodying a clear but succinct statement of our present knowledge of surgical pathology, symptomatology, and diagnosis, and such a detailed account of treatment as to form a reliable guide to modern practice. In this new edition the entire book has been carefully revised, and special effort has been made to bring the work down to the present day. The chapters on Military and Naval Surgery have been very scrupulously revised and exten-

sively re-written in the light of the knowledge gained during the recent wars. The articles on the effect upon the human body of the various kinds of bullets, and the results of surgery in the field are based on the latest reports of the surgeons in the field. The chapter on Diseases of the Lymphatic System has been completely re-written and brought up-to-date; and of special interest is the chapter on the Spleen. The work should specially appeal to Canadians, two clear and concise articles having been contributed by Mr. Irving Cameron and Dr. G. A. Peters, the former treating of Surgical Tuberculosis, and the latter, Surgery of the Rectum. The already numerous and beautiful illustrations have been greatly increased, constituting a valuable feature, especially so the seventeen colored lithographic plates. The work is excellent; we know of none to surpass it. It is clear, concise, and up-to-date.

The Treatment of Fractures. By CHAS. L. SCUDDER, M.D., Assistant in Clinical and Operative Surgery, Harvard Medical School. Third Edition, revised and enlarged. Octavo, 480 pages, with 645 original illustrations. Philadelphia and London: W. B. Saunders & Co. Canadian Agents, J. A. Carveth & Co. 1902. Polished buckram, \$4.50 net; half morocco, \$5.50 net.

This book is intended to serve as a guide to the practitioner and student in the treatment of fractures of bones, being a practical statement of the generally recognized methods of dealing with fractures. The attention of the student is diverted from theories to the actual conditions that exist in fractured bones, and he is encouraged to determine for himself how to meet the conditions found in each individual case. Methods of treatment are described in minute detail, and the reader is not only told, but is shown, how to apply apparatus, for as far as possible, all the details are illustrated. This elaborate and complete series of illustrations constitutes a feature of the book. There are 645 of them, all from new and original drawings and reproduced in the highest style of art. In this edition several new fractures have been described, and an excellent chapter on Gunshot Fractures of the long bones has been added. The reports of surgeons in the field during the recent wars have been carefully digested, and the important facts regarding fractures produced by the small caliber bullet have here been concisely presented. In many instances

photographs have been substituted for drawings, and the uses of plaster-of-Paris as a splint material have been more fully illustrated. In its new form, the work fully maintains the deserved reputation already won.

A Reference Handbook of the Medical Sciences. Embracing the entire range of scientific and practical medicine and allied sciences by various writers; a new edition, completely revised and rewritten. Edited by ALBERT H. BUCK, M.D., New York City. Vols. III., IV.; illustrated by chromo-lithographs and 850 half-tone and wood engravings. New York: William Wood & Co. 1902.

The general excellence of the first two volumes of *The Reference Handbook of the Medical Sciences* has been maintained in the two volumes which have since appeared. A number of Montrealers have contributed to the great number of subjects considered, including Finley, Blackader, Morley, Fry, and Adami. We have no hesitation in saying that the work, when completed, will prove the most valuable American medical publication which has appeared in the past ten years.

Essentials of Diseases of the Ear. (Saunders' Question-Compend.) By E. B. GLEASON, S.B., M.D., Clinical Professor of Otology, Leico-Chirurgical College, Philadelphia; Surgeon in Charge of the Nose, Throat, and Ear Department of the Northern Dispensary, Philadelphia, etc. Third Edition, thoroughly revised. 16mo. volume of 214 pages, with 114 illustrations. Philadelphia and London: W. B. Saunders & Co. J. A. Carveth & Co., Canadian Agents. 1902. Cloth, \$1.00 net.

This valuable little help, one of Saunders' Question-Compend Series, has reached its third edition. The book will be found of service, not alone as an aid to the student, but also to the physician who wishes to take a post-graduate course in Otology, enabling him, as it does, to acquire the rudimentary facts of the science with as little preliminary reading as possible. The essentials of Otology have been stated concisely, without sacrificing accuracy to brevity. The diagnosis and treatment of diseases of the ear have been brought absolutely down to date by a thoroughly

scrupulous revision; only such methods of treatment being included, however, that have personally proved efficacious in the majority of cases. Besides carefully revising the old text, many interpolations of new matter have been made, thus somewhat increasing the number of pages in the present edition. The illustrations—many from original drawings—have been selected with the aims of the book constantly in view; and they form a very commendable feature of the work. Indeed, the little volume before us will unquestionably continue to be one of the most popular of Saunders' unequalled Question-Compend Series.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, assisted by H. R. M. LANDIS, M.D. Vol. 3. Diseases of the thorax and its viscera, including the heart, lungs, and blood-vessels; dermatology and syphilis; diseases of the nervous system, obstetrics. Philadelphia and New York: Lea Brothers & Co., 1902. VIII., 17-431 pp. Price, cloth, \$2.50.

This volume continues to maintain the high standard of excellence of its predecessors. The first part of the work is devoted to diseases of the thorax. The important subject of pulmonary tuberculosis is considered, and many valuable suggestions are given in its treatment. The remainder of the volume is given to a review of the advances in the subjects of Dermatology, Syphilis, Neurology and Obstetrics, all of which are of great value to general practitioners.

Text-Book of Physiological and Pathological Chemistry. By G. BUNGE, Professor of Physiological Chemistry at Bale. Second English Edition, translated from the Fourth German Edition, by FLORENCE A. STERLING, and edited by ERNEST H. STERLING, M.D., F.R.S., Professor of Physiology in University College, London. Philadelphia: P. Blakiston's Son & Co. Canadian Agents: Chandler and Massey, Toronto. 1902. Price, \$3.

This work has been before the medical profession and has had a great influence on physiological thought. Physiologists and physiological chemists look upon it as an abstract of the views and

researches of Schmiedeberg and his pupils. Professor Bunge presents the subject in the form of a series of lectures and has succeeded in making what is generally considered a difficult subject to understand, intensely interesting reading. The chemistry of metabolism, both normal and diseased, is discussed in the light of the most recent advances and views on the subject. Among these researches we might especially mention the synthesis of hippuric acid in the kidney, by Bunge and Schmiedeberg; the formation of urea by Schroder; the origin of uric acid, by Minkowski and Naunyn; pancreatic diabetes, by Minkowski, as well as researches into the chemistry of nucleins, mucins, etc. Descriptions of analytical methods have been for the most part omitted, but references to the original articles, containing them are given in foot notes. The work is eminently scientific and of great practical value. The reader cannot help but think that the author is a chemist and philosopher as well as a physiologist.

Essentials of Histology. (Saunders' Question Compend.) By LOUIS LERY, B.S., M.D., Professor of Histology and Pathology, Vanderbilt University, Medical and Dental Departments; Pathologist to the Nashville City Hospital, etc. Second Edition, thoroughly revised and greatly enlarged. 16mo. volume of 263 pages, with 92 beautiful illustrations. Philadelphia and London: W. B. Saunders & Co. J. A. Carveth & Co., Canadian Agents. 1902. Cloth, \$1.00 net.

This valuable work has been designed not only as an aid to the beginner, but also to help the practitioner who, having graduated at a time when histology was not taught in all the colleges, desires to gain sufficient knowledge of the subject to facilitate his better understanding of pathology. Both these aims it admirably fulfils, as is evidenced by the demand for a second edition in so short a time. In this edition a number of new original illustrations, mostly photo-micrographs, have been inserted to better elucidate the text. The chapter on Technic has been enlarged, a description of the appendix and rectal valves added, and the entire chapter, as, indeed, the entire book, thoroughly and carefully revised. As did the first edition, the work in its present form stands as a model of what a student's aid should be; and we unhesitatingly say that the practitioner as well would find a glance through the book of lasting benefit.

Selected Abstracts

THE BLOOD IN APPENDICITIS.

J. C. Da Costa, Jr., has collected a series of observations on this now important subject, and the results of his investigations are as follows (*American Journal of the Medical Sciences*, November, 1901): (1) The average case of appendicitis before operation shows a loss of about thirty per cent. of hemoglobin, and of more than half a million erythrocytes per cubic millimeter. Occasionally the anemia is of a grade so high that it appears to constitute in itself a serious complication, and to raise a doubt as to the safety of surgical interference should the latter otherwise be indicated. Doubts on this score, however, have not been justified by the records of the cases included in this series. (2) Moderate leucocytosis may occur both in the absence and in the presence of an abscess and its consequences. It accompanies about thirty-five per cent. of non-purulent and ninety per cent. of purulent cases. (3) Leucocyte counts ranging between 10,000 and 15,000 or 17,000 cannot be depended upon to reflect the nature of the local lesion, since this degree of increase may be found both in catarrhal and in purulent cases. Counts of 20,000 or more almost invariably indicate the presence of pus, gangrene, or general peritonitis, one or all. (4) Leucocytosis may be absent both in trivial, catarrhal, and in fulminant cases, as well as in forms of circumscribed abscess. (5) In operative cases, thorough evacuation of the abscess is followed within a few days by a decline to normal in the number of leucocytes provided that the recovery of the patient is uneventful. Persistence of the leucocytosis after the third or fourth day following the operation may usually be attributed either to undrained pus pockets, to general peritonitis, or to both of these factors. In a patient unmistakably septic absence of leucocytosis should be interpreted as a sign of intense infection, the prognosis of which is more likely grave than favorable. A high leucocytosis in such instances does not necessarily indicate a favorable prognosis, but simply represents an intense affection coupled with normally active resisting powers on the part of the patient. Absence of leucocytosis in a patient with mild, indefinite symptoms is a clinical sign of no tangible value, in so far as it may serve in detecting the presence of pus; since a large abscess, if thoroughly circumscribed, may exist without causing the slightest increase in the number of leucocytes.

The writer emphasizes the importance of not being led into the diagnosis of appendicitis in the presence of these blood

changes alone, as other conditions—such as ovarian abscess, pyosalpinx, ectopic pregnancy, perinephritic abscess, hepatic abscess, cholecystitis of the gall-bladder, and malignant disease of the cecum—have all been known to give difficulty in diagnosis from appendicitis, and in each of these examination of the blood may show similar conditions. The non-occurrence of leucocytes in typhoid fever is, however, of assistance.—*Medical Age*.

TYPHOID BACILLI IN URINE FOR A LONG TIME.

Busing (*Deut. med. Woch.*, June 19th) reports a case which is of great importance, in showing that the urine may be infectious long after the patient has recovered from an attack of typhoid fever. On April 6th he examined a series of urines of the soldiers who had been in China, and who had been attacked by typhoid. Of sixteen specimens fifteen proved to be free from typhosus bacillus, but one contained bacilli which both morphologically and biologically correspond to the characters of *B. typhosus*. The patient had been attacked in Tien Tsin on October 10th, 1901, and was discharged as well on Christmas Eve, after he had been convalescent for about two and a-half weeks. The specimens continued to contain bacilli on April 7th, 8th, and 17th, and only on April 19th were no more found. Busing points out that in spite of the absence of all symptoms *B. typhosus* had been present in considerable quantities for over four months, since the beginning of convalescence. It is therefore of utmost importance from a hygienic point of view to examine the urine of all typhoid patients before discharge, and as long as bacilli are found in the urine to disinfect the same with utmost care. Another interesting point in the case lay in the fact that from April 18th he was given urotropin, and the bacilli disappeared on the following day. He states that he has observed the same potent action of urotropin in destroying the bacilli in urine in other cases.—*British Medical Journal*.