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THE MANITOBA AND WEST CANADA

LANCET

A Journal of Medicine, Surgery, Physiology, Chemistry, Materia Medica and Scientific News, being the Journal of the Winnipeg and Manitoba Medical Associations.

PUBLISHED MONTHLY. SUBSCRIPTION $1 PER ANNUM IN ADVANCE.

Vol 6. WINNIPEG, JUNE, 1898. No 2.

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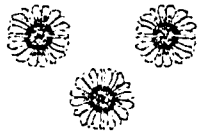

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ORIGINAL ARTICLES.

Coroners Inquests.

This journal has always expressed strong disapprobation of the culpable manner in which the holding of one of the most important procedures of the laws governing the British Empire is set at naught in this Province of Manitoba. But in a recent case a burlesque element has been added to the neglected function. A man was shot dead in the noonday, the shooting was witnessed by at least two people, the medical man who arrived on the spot shortly after the murder on cleansing the head from the mass of congealed blood, and mud, with which it was besmeared, found the entrance point of a bullet in the temple. The cause of death was evident. The Coroner was summoned to arrange as to the disposal of the body, a proceeding which the law calls for. There are two coroners in this city; the second one was sent for and it is presumed they, with the chief clerk in the Attorney-General's Department, decided that there was no necessity for an inquest, but incredible as it may appear, decided that a post-mortem to find out the cause of death was required, and, at the magisterial enquiry, which ought to have been a Coroner's inquest, the Coroner himself gave evidence to the effect that the apparent cause of death was from a wound in the head, the post mortem being held by the two coroners. The jury summoned on an inquest are the usual parties to ask for a post mortem examination, but in this case it is most unlikely they would have done so. If then, it was decided, and most unquestionably wrongfully decided, in the case of this unprovoked murder, that an inquest was not necessary, how far less necessary was it to hold a post mortem examination. We were under the impression hitherto that the coroners of the Province have been over ruled by the Attorney-General's Department; but on referring to the Revised Statutes of Manitoba Chapter 32, Clause 4 says: "No fees shall be obtainable by any coroner unless prior to issuing his summons for a jury he states on oath, that there is reason for believing that the deceased did not come to his death from natural causes, or from mere accident, or mischance, but from violence, or unfair means, or culpable, or negligent conduct of others. It is therefore quite evident that this assumption of right on the part of an official in the Attorney-General's Department to decide whether an inquest is or is not necessary is one which in no way pertains to him, and a refusal on his part to pay the Coroner who holds an inquest under such circumstances as the clause referred to states would, when made public place the Department in a very unpleasant position, to use a mild expression.

What is the cause of Lynch Law prevailing in the States? The uncertainty that surrounds the guilty party being punished. It is to be deplored that the administration of justice in a part of the English Empire i fast tending to introduce a similar condition of things. People die violent deaths and are hur-

ried to their graves by authority, and that assumed. Brutal murders are so bungled in the prosecution that failure of justice occurs. It is time for the public to seriously consider this subject, and refuse to be bulldozed and deprived of privileges which it is the boast of Englishmen to possess. It is not to be supposed that the Coroners of Manitoba examine into cases of death and send in a report that an inquest is not necessary—in the latter instance acting outside their powers—for no remuneration. What do they receive for this service and what would be the extra expense if the law was upheld and an inquest called. The information would be interesting to the profession and the public.

The laws of the United Kingdom are supposed to be those under which the Colonies of Great Britain are governed. But in the Province of Manitoba one of the fundamental laws of the empire, a law of vital interest to the community at large, one that under any and every case of violent death should be strictly carried out, is contemptuously set aside without precedent or authority.

By Dr. R. M. Simpson, professor of clinical medicine, Manitoba Medical college, physician Winnipeg General Hospital.

Several cases of scurvy were admitter under my care into the Winnipeg General Hospital exhibiting the usual symptoms of the disease, namely, spongy gums, constipation, ecchymoses, weakness and emaciation, with a history that they had been living chiefly on fish and salt meats, potatoes being more expensive and vegetables of any kind being very difficult to obtain. Bread and flour in different forms were however used among these people, but notwithstanding this the disease showed itself. Of course the unsanitary conditions of the environments were conducive to the progress of the disease. They were put on the usual anti-scorbutic treatment namely vegetables, fruits, etc., and in all cases the patients improved rapidly.

SCURVY.

Cases of scurvy have been of rare occurrence in Manitoba. With the exception of those that were met with about a quarter of a century ago during the building of the C. P. R. between Winnipeg and the Great Lakes, the practitioner has had but few opportunities of acquiring a practical knowledge of the disease. During the last winter several cases were admitted into the Winnipeg General Hospital from the Galician settlement near Dauphin, Man.

In view of the interest aroused in these cases and the probability that other cases of the disease may be confidently expected to occur, a consideration of the several cases of scurvy would not be out of place. That an unsuitable dietary is the cause of scurvy there is no disputing, but there is considerable difficulty in deciding what particular dietetic error is responsible for the profound alteration of the nutritive functions observable in the disease.

Without entering into an exhaustive historical account of this disease let it suffice to state that its ravages among both naval and military forces were very severe. Thus in a cruise of three years' duration a man-of-war would lose sometimes more men from scurvy than from the guns of the enemy; and even in shorter voyages the drain on the crew from this cause alone was serious.

The disease constantly breaking out amongst those whose diet consisted largely of salt beef (soldiers and sailors) seemed to give a clue to the cause, and it was generally agreed that salted provisions were the cause of scurvy, this coincidence being taken as the relation of cause and effect. This theory of scurvy may be called, the theory of excess of sodium and potassium salts.

Then, after it was shown—notably by Anson in his voyage round the world—that fresh vegetables would cure scurvy, its ravages were ascribed to an absence of vegetables or of vegetable acids, either alone, or in combination with salt meats. This we may call the vegetable acid theory.

A case of scurvy on board a man-

of-war or a properly victualled merchantman, is of rare occurrence today, and should the disease break out the blame is at once laid upon those who found the ship. This immunity from the disease is due to the British Board of Trade regulations which requires that an ounce of lime juice be served out to each man per diem. This amount, experience has shown to be sufficient to maintain health on a dietary of salted provisions for an indefinite period.

A third and more recent theory is that scurvy is caused by ptomaines, the products of decomposition. In the preservation of meat by salting, before the salt can penetrate to the centre of a large piece, or when the meat has remained unsalted for any considerable time, decomposition, with formation of ptomaines has already begun, but may be arrested by the salt at a point short of being offensive to the sense of taste or smell, but the meat is nevertheless unfit for human food, and a continued use of it will sooner or later inevitably produce scurvy.

Briefly stated these theories may be called:

The Sodium and Potassium Theory.
The Vegetable Acid Theory.
The Ptomaine Theory.

Sodium and Potassium salts are normal and therefore essential elements in the human economy. Sodium salts are non-poisonous even when given in excessive quantities, though the same cannot be said of potassium.

In the curing of beef an excess of sodium chloride may be employed, but potassium nitrate is used in the proportion of two ounces to each 100 pounds of meat. Only a portion of these salts find their way into the meat, the balance being present in the liquid brine, and upon cooking the meat there is always more or less dissolved out in the process, so that the total amount of NA and K actually ingested with the meat must be considerably less than the original quantity present, perhaps representing a daily amount of five grains of K N 03

That this would produce scurvy there is no evidence to prove; the experience of medical practice is against this conclusion.

The proportion of K in K N O is 25% so that in grs. V of K N O there is an amount of K equivalent to grs $\frac{111}{111}$ of K I ($K^{39.14.16}N^{14}O_3 = 101$ $K = \frac{39}{101} = 2.59\%$ $K^{39.127}I = 166$, $K = \frac{39}{166} = 4.25\%$ grs. $\frac{111}{111}$ K I = K 1.275, I 1.725 = 3000)

The effect of the N A would be to increase the consumption of water, and the excess of both would pass out through the kidneys.

2. If the vegetable acid theory were correct, one would always expect that scurvy would appear where an exclusively meat diet was adhered to. But experience does not prove that. Take the records of the H. B. Co. in this country. At the majority of their northern posts, practically no vegetables nor fruits were used, nothing but meat and fish. Several years ago the writer conversed with men from the Mackenzie river district, and was informed that a pound of flour at Christmas was all they got during the year. One of these men had been there eleven years, another fourteen, subsisting on an entirely flesh diet, and yet the records of the company do not show any cases of scurvy. In fact the only Hudson Bay Post where scurvy has occurred is Norway House. At this post large quantities of wild geese are shot in the spring and salted down for the summer season. The disease would show itself towards the end of the season, when for months past the only available meat was salted geese. But at no other post was there any sign of the disease though an exclusively meat diet prevailed nearly all the year around.

These facts show that the absence of vegetables or of vegetable acids from a dietary, is not sufficient to cause scurvy.

The third or ptomaine theory appears to agree more closely with ascertained facts than the other two. Old salted beef it is well known developes a strong putrefactive odor very noticeable when boiling, though the taste may not be much altered. This can only be due to chemical changes taking place in it, independent of the Na and K. The salted geese

became very rank and strong—putrefactive, in fact, towards the end of the summer. The salting process was not done thoroughly and only delayed decomposition, did not prevent it.

Nansen declares that salted meats will not produce scurvy; not even a prolonged use of them, provided that no putrefactive or other change producing animal ptomaines has not taken place, but that in the majority of cases such changes have taken place in salt meats and have been partially arrested by the salting. It is claimed that long before either the taste or smell will give warning that the meat is unfit for food, ptomaines may be present in sufficient quantities to threaten health.

Just what these animal poisons really are, and how they act in order to produce the profound change in the blood, and through it on the tissues, is not at present well understood; but that this view is a step nearer the truth concerning scurvy there can be little doubt.

It is conceivable that a total absence of vegetable acids would tend to a lowering of the vital resistance of the tissues, and the same may be said of a continuance of a salt dietary, and that these two causes operating together will produce scurvy there is abundance of proof. It is also a fact that a daily ration of lime juice will not only prevent scurvy, but will also cure it if present. While this may prove that vegetable acids are specific against scurvy, the converse is not necessarily true, viz., that an absence of vegetable acids will produce scurvy. We have the records of the H. B. Co., to prove the contrary.

But in almost every case where scurvy has broken out among troops seamen or small communities, there is a history of salted meats that gave out an offensive odor when cooking. During the construction of the C.P.R. between Winnipeg and the Great Lakes scurvy (black-leg) was a common complaint. The salt pork that formed the staple article of diet was rank and rusted, and frequently so unpalatable that even hungry laboring men could hardly eat it. Cases have been observed among Italian railroad laborers who boarded themselves in miserable little huts along the right of way during construction. Their food consisted principally of flour, beans, peas, and salt pork; no fruit and rarely potatoes. The salt pork in these cases was apparently sound, well cured meat, similar in quality to what the contractors and their own men lived on, but in addition these latter had canned fruits and potatoes. No cases of scurvy occurred on the line outside of the Italians.

In connection with the treatment of scurvy or black-leg, on the railroad, potatoes eaten as an apple, raw, two or three medium sized ones daily, were reputed to be specific as a curative agent.

A very peculiar case from causes not enumerated above was admitted into Great Ormond Street Hospital for Children, London, in the year, 1888. An infant of about four months old was admitted on a Friday with well marked scurvy, subcutaneous hemorrhages, spongy gums, etc. The history was as follows: The parents were Scotch. The mother had little or no milk for the child; as oatmeal agreed so well with them they thought it would suit the child, and acted accordingly, with the above result. The lesions were so well marked that a photo of the child was desired, but owing to an accident the artist was not able to attend till Monday, when such an improvement had resulted from proper feeding that he child presented nothing that the camera could show to advantage.

The above is of especial interest at the present time. Many cases of scurvy have occurred among the wanderers to the Klondyke, and as economy of space is a necessity for this far distant journey, we may call attention to a very elegant preparation of concentrated lime juice in capsules introduced by J. F. Howard, of this city.

SELECTED ARTICLES.

Until some new steps are taken in regard to the looking after houses infected with tuberculosis, the ravages of the plague will not be greatly mitigated The above reflection must often

come to those physicians in whose diocese many families come and go, such as the boarding-house districts of towns and cities. Here is a Post-office clerk who coughs and expectorates and emits his exhalations in an institution the daily resort of hundreds of citizens and the habitat, for seven or eight hours each day, of many or few employees. He occupies a room at a boarding-house for say, three months, when off he goes to another. Then in a shorter or longer time he seeks new quarters, all of which he infects, none of which, probably, is ever disinfected. He dies. May be, or may be not, his physician sees him through his last illness recommends that the apartments of the deceased be disinfected thoroughly.

Another instance. (True to the life.) Over on A——— Street is an old frame dwelling, lately taken by a young healthy married couple and two hearty children. Within two months of their occupancy of the house the family physician is called to see the older child, who has had "a bad cold" and fever and "won't eat for two weeks. He finds on examination, his his little patient suffering from acute tuberculosis. The mother says she has had a "dreadful cough," and examination of her sputum shows the tubercle bacilli. "Who lived in this house before you, do you know?" the doctor asks.

"We don't know, but the neighbors say three of the family died of consumption," the sick woman answers wofully.

The doctor looks around the old frame "shack," and seeing the impossibility of disinfection feels like setting it on fire.

Such instances might be multiplied many times. Every medical man is conscious of this truly awful state of things.

So the following, from Herman Biggs' address at the last meeting of the British Medical Association, shows that the dawn of a brighter day is breaking on the greatest city in the New World.

"The Health Board of New York City first began an educational campaign in relation to the causation and prevention of pulmonary tuberculosis in 1889. In that year a communication on this subject, presented by the writer and the associated Consulting Pathologists of the Department, as widely published, and leaflets, based on it, giving the essential facts as to the nature of the disease, were freely distributed. No further action was taken at that time, as investigation showed that the medical profession and the public were not then prepared for more extended measures.

"In December, 1893, the attention of the department was again called to the subject by the writer, and it was determined to institute at once more comprehensive measures for the prevention of this disease. The measures then adopted required the notification of all cases of pulmonary tuberculosis occurring in public institutions, and requested reports of cases occurring in the practice of private physicians; they also included arrangements for the bacteriological examinations of sputum, to assist in the early diagnosis of this disease; the inspection of all reported cases in tenement houses, lodging-houses, hotels and boarding houses, and the instruction of the patients and their families as to the nature of the disease, and the means to be taken for its prevention; the inspection of premises in all instances where deaths were reported as due to tuberculosis and the issuing of orders, where it was deemed necessary, upon the owners of apartments which had been occupied by consumptives and vacated by death or removal, requiring that such apartments be thoroughly renovated, by painting, papering or kalsomining, before they were again occupied by other persons; and the education of the public, by wider and more comprehensive methods, as to the nature of the disease.

"Placards were attached to the doors to prevent the reoccupation of apartments which had been vacated by death or removal before the orders requiring renovation had been complied with.

"Under the resolutions by virtue of which these measures were enforced, 4,166 cases of tuberculosis were reported in 1894; 5,818 in 1895, and

8,334 in 1896. So far as was possible all of these cases, except those in private houses, were visited, or the premises where they lived were inspected, and, in addition, the premises occupied by persons dying from tuberculosis (numbering each year nearly 6000) were inspected, and such action taken as was considered possible and desirable. Altogether the premises and cases thus coming under observation during these three years numbered 35,000.

"These facts convey some idea of the enormous sanitary importance of the subject. It is conservatively estimated that there are at least 20,000 cases of well developed and recognized pulmonary tuberculosis now in New York City, and an additional large number of obscure and incipient forms of the disease. A very large proportion of the former cases constitute more or less dangerous centres for infection, the degree of danger depending in each instance upon the intelligence and care which is exercised in the destruction of the expectoration. All the suffering and death consequent upon the prevalence of this disease, in view of modern scientific knowledge, is largely preventable by the careful observation of simple, well understood and easily applied measures of cleanliness, disinfection and isolation.

"In the beginning of 1897, the Health Board further adopted some recommendations made by Dr. T. Mitchell Pruden, Consulting Pathologist to the Health Department, and the writer, which advised that pulmonary tuberculosis be declared to be an "infectious and communicable disease, dangerous to the public health," and which required "the notification of all cases occuring in the city," in the same way as is required in regard to small-pox, scarlet fever, diphtheria and other similar diseases. Tuberculosis, however, in accordance with the special section of the Sanitary Code, enacted to provide for these measures, is distinctly separated from these other diseases—is not classed with them as a contagious disease, but is referred to as "an infectious and communicable disease." It has always appeared to the Health Board exceedingly desirable that a broad distinction should exist in the public mind between this disease and those diseases which are more properly classed as contagious.

"In the treatment of apartments, which have been occupied by tubercular patients and vacated by death or removal, renovation has been and is ordered, rather than disinfection attempted, because the Health Board has always felt that disinfection for tuberculosis in the poorest tenement houses could not be satisfactorily performed, and has considered renovation as certainly efficient. In the thousands of orders which have been issued under the resolution referred to upon the owners of real property during the last four years, requiring the renovation of premises, little or no difficulty has been experienced in enforcing compliance, and rarely has there been serious objection.

Public institutions, hospitals, asylums, homes, etc., are now not only required to report the name, last address, sex, age, and occupation of every case of tuberculosis coming under observation within one week of such time, but they are further required to notify the department of the discharge or transfer of such patients. The purpose of this procedure is to keep under more or less constant supervision those cases of pulmonary tuberculosis which occur among the poorest classes of the population; in other words, those which are most likely to be dangerous sources of infection to others. Unfortunately, at the present time, there are no hospitals directly under the control of the Health department, for the isolation of cases of pulmonary tuberculosis, but it is hoped that such hospitals may be soon provided.

"The best medical opinion forbids that persons suffering from pulmonary tuberculosis be treated in association with other classes of cases in the general medical wards of general hospitals. This opinion is based on the daily observations of dangers incident thereto, and it has very properly resulted in the exclusion, to a large extent, of persons suffering from this disease from any of the general

hospitals to which they were formerly admitted."

QUACKS AND THEIR METHODS.

The free distribution of samples of patent medicines from door to door is an evil which our southern friends are endeavoring to end. On this subject the Los Angeles Herald says:—

"The Board of Health in their report recommend that the City Attorney be instructed to issue an ordinance preventing persons from promiscuously distributing patent medicines. This subject came up before the council some weeks ago, at a time when several children had been reported taken sick by taking these medicines. This alarmed the members and they immediately adopted a motion to prevent medicines from being thrown into yards. The matter was referred to the Board of Health, who acquiesced in the suggestion, and passed a resolution favoring the issuance of an ordinance by the city attorney stopping the nuisance. The council approved of the suggestion."

Every other health board in the State of California should pass similar ordinances to abate a growing nuisance.

Of no less importance is the question of medical advertisements in newspapers. Everybody knows that even in so-called first-class papers vile and disgusting advertisements can be found in their columns. We are pleased to note that there are some papers who think more of the cleanliness of their pages than of the few dollars which come from such a questionable source. The Redlands California Citrograph has put itslf on record on this subject, as will be seen from the following from its editorial columns. It goes without saying that the Citrograph will receive the support of every clean-minded person in Redlands. The following which we quote from its columns speaks for itself:

"Another 'Weak Men' advertisement comes to us this week for publication. We are asked to fill out the contract at our regular rates and it will be accepted at our own figures. The blank is too small to hold our figures. The aid is not acceptable at any price. This class of advertisers are all fakes and humbugs, liars, swindlers and thieves. We will not be a party to their fraud. If you are sick or ailing go to the best regular physician of your own neighborhood and let the quacks severely alone if you value your health."—Pacific Medical Journal.

BY D. D. CROWLEY, M. D., Oakland.

(Read before the Medical Society of the State of California, April 1898.)

Numerous and startling innovations in brain surgery have taken place during the last decade. There is scarcely any portion of the brain at the present time but what may be invaded by the surgeon's knife. Various essays have been written by surgeons throughout Europe and America upon the pathological conditions that may arise in the brain, the surgery necessary for their removal, and the conditions resulting from such interference. A volume could not include this information. Therefore I am compelled to inform my colleagues that though the title of my paper is brain surgery, it touches only feebly upon that part in which I have had some experience. I will dwell briefly upon the topography of the brain; also upon the subject of pressure upon a few important brain centers.

Taking for granted that there is a lesion of the brain, and that there are local manifestations of the same, for instance an abcess either extra or intra-dural, the manifestations in the arm, leg, or tongue, will at once indicate that the central lesion is in the neighborhood of the fissure of Rolan. do. This fissure is one of the principal land marks on the brain, but as the brain is enveloped by a dense bony structure, we must conclude before operation what special line on the skull will correspond to, or immediately cover a certain structure within.

The method of mapping out the situation of the fissures of the brain on the skull is to first shave the scalp and then measure the distance from the glabella or protuberance between the eye brows to the inion or occipital protuberance over the center of the vertex of the skull.

Practically the fissure of Rolando commences one-half-inch back of a point midway between the glabella and inion and runs downward and forward to the extent of 3 3-8 inches, forming with the median line of the vertex, an angle of sixty-seven degrees. The lower part of this fissure does not follow this line, but becomes perpendicular. If we were absolutely certain that we had this angle, we could readily locate the fissure of Rolando, and could trephine over the center of motion to the legs, arms, and tongue.

There are different crytometers for the purpose of outlining the fissures of the brain upon the surface of the skull. The most prominent of all is Wilson's. It consists of two strips of flexible metal, forming a letter "T." The horizontal position of the "T" rests upon the glabella. The perpendicular portion rests upon the median line over the longitudinal sinus, and terminates at the inion or occipital protuberance. There is a lateral arm attached to the antero posterior part which forms with it an angle about sixty-seven degrees. This arm is given off one-half inch posterior to a central point upon the horizontal portion.

A means of outlining the fissure and to me a very practical one, is that of Mr. John Chiene, of Edinburgh University. He takes a square piece of paper and folds diagonal corners, making an angle of 45 degrees. He then folds back one layer of the folded square, making with it an angle of 22 1-2 degrees. After which he unfolds the 22 1-2 degrees from the 45, both of which make 67 1-2 degrees, which Mr. Chiene says is near enough to 67 degrees to be of practical utility in locating the fissures of Rolando.

The apex of the angle which forms 67 1-2 degrees now placed one half inch posterior to a point on the median line between glabella and inion, and the line on the same side which forms an angle of 90 degrees lies over the median line of the skull toward the forehead. The edge of the folded paper will then rest over the fissure of Rolando. (Doctor Crowley demonstrates with paper Chiene's method on skull.

The fissure of Slyvius is of some importance in brain surgery, as the middle cerebral artery which it contains is more often ruptured than any other in the brain. It has been termed by Charcot the artery of cerebral hemorrhage. This fissure is outlined in the skull by drawing a line by the shortest route from the external angular process of the frontal bone to the occipital protuberance. The line will pass about one-half an inch above the external auditory meatus. The fissure of Sylvius begins one and one-eighth inch posterior to the external angular process on this line, and from this point passes directly toward the parietal eminence. As this line corresponds to the squamo-sphenoidal suture, the latter land mark may be of importance to the operator when he has cleared the bone. It is well to remember that the fissure of Sylvius is nearly horizontal. It rises but little on leaving the external angular process on its course to the parietal eminence, and only a small portion of brain substance separates it from the lower extremity of the fissure of Rolando. (Demonstrates.)

In different operations the skull where the membranes of the brain or the brain centers are to be uncovered, care should be taken to avoid at least two sinuses, the longitudinal and lateral. Upon opening either, death may follow unless energetic surgery is carried out. The longitudinal sinus is easily outlined upon the skull. It begins opposite the glabella or prominence between the eye-brows and continues on the inner surface of the skull to a point opposite the inion or external occipital protuberance. It is lodged in a groove throughout its course, which passes along the inner table of the frontal bone, the sagittal suture touching both parietals, across the occipital to a point directly inside of the occipital protuberance.

If by any chance it be required to operate on the skull over the longitudinal sinus, first trephine some distance from it, and then with a groove director, a blunt elevator, and the finger, the dura mater and likewise the enclosed sinus can be separated from their bony attachment.

Following this there will be no danger in trephining or chiseling the cranium over the point of separation.

It is more difficult by far to map out the lateral sinus, and yet it is most important to possess a knowledge of its location. There is no sinus within the cranium that is more often approached with the trephine or chisel. This is due principally to the inflammation of the midle ear, and its extension into the antrum of the mastoid portion of the temporal bone. A horizontal line extending from the occipital protuberance to a point one inch behind the external auditory meatus at which point it becomes nearly perpendicular and grooves the inner surface of the mastoid process will outline on the skull the lateral sinus. This perpendicular line extends downward, forms nearly a right angle with the horizontal, and as it is lodged in the mastoid behind the ear the only way to avoid it in diseases of the mastoid is not to cut through both tables of the skull.

In ligating the middle meningeal artery, a vessel that is frequently ruptured in fractures of the skull, Vogt and Beck advise to trephine one half inch above the zygoma, and a similar distance behind the angle of the orbit. another writer says that it is situated two fingers' breadth above the zygoma, and a thumb's breadth behind the frontal process of the malar.

Kroenlim advises trephining for the purpose of exposing this artery 1 1-4 inch posterior to the external ang. process on a level with the upper body.

In trephining over the point mentioned with a one inch trephine the anterior or middle branch of the artery can be reached. If a clot of blood is not found in this locality the trephine can be again used just below the parietal eminence. When a clot is reached it should be removed and the artery ligated. A very excellent method of quickly catching the meningeal artery is to include it and the skull in the grasp of a haemostatic forceps. The forceps can be left 48 hours and the wound may be packed about it or the bone may be cut away with a chisel or rongeur forceps and the artery ligated.

If there be a fracture of the skull, the depression in the bone will generally direct the operator where he should trephine. After an opening is made, if an abscess be present and it be epidural, it should be thoroughly irrigated and dressed antiseptically. If sub-dural, the dura mater should be incised and the cavity treated similarly. The cranium may be contused and not fractured. Under such circumstances pus may form externally under the scalp and ultimately between the membranes and the brain. In the latter instance the cerebral disturbances in the extremities or trunk will generally indicate the pressure of pus within the skull and its location. An abscess may form within the brain substance and remain for months and years without causing the patient any inconvenience. It pushes aside the brain substance so gradually that the nerve centres are not disturbed. If by any chance this slow growing abscess should take on activity causing undue pressure there would be terminal manifestations, sufficient to direct the operator to the trephining area. After removing the button of bone the membranes will be pushed well into the aperture, and no pulsation will be felt.

After dividing the dura a small aspirating needle or groove director can be thrust into the brain to the abscess. When pus is found insert a haemostatic forceps into abscess cavity and separate blades. The cavity should be irrigated and drainage carried on until it collapses.

Many brain tumors can at present be located by means of the cerebral localization and removed. Parks, of Buffalo, gives them in the following order of frequency: Tubercular gumma, glioma, sarcoma, cysts, carcinoma and syphilitic gumma, and a small proportion of fibroma. Parks thinks that out of one hundred cases of brain tumors that not more than from 5 to 7 per cent are so placed as to justify surgical attack. However correct this statement may be, it is too evident at times that death would be preferable to the years of suffering resulting from the pressure of a brain tumor.

The recent works, either surgical or anatomical, agree as to the situation

of the motor areas of the brain. In a general way they locate the movements of the leg, in front and behind the upper third of the fissure of Rolando. The middle third of this fissure includes the movements of the arm, and from above down in the following order: Shoulder center, elbow center and hand center. The lower third of this fissure is surrounded by the face, mouth and larynx centers, and between the ends of the fissure of Rolando and the fissure of Sylvius is located the center of speech. Hearing is located in the middle and posterior parts of the temporo-sphenoidal convolution.

Dr. Stratton, of Oakland, has had under his care a very interesting case of brain tumor. By his permission I have made use of a few of the most interesting points in the case. The patient, a female, aged 42, no history of constitutional disease in self or immediate family, suffered since 1894 with nervous disorders. There were tonic spasms of upper and lower extremities, below the elbow and knee respectively. She had no motor or sensory derangement until July, 1895, at which time she had numbness of the toes and pain in the entire foot, except the four outer toes, with only brief intervals of relief. The great toe became permanently extended. In February, 1896, there were tonic spasms lasting three to four minutes in the muscles below knees, no unconsciousness, although convulsive seizures took place every three to four weeks. October, 1896, there were clonic spasms of right side except face, followed by numbness of the tongue and the right side of body. On October 26, a clonic spasm, right side, with unconsciousness, took place. There was frothing at the mouth. Subsequent to this the arm and leg began to lose strength. This condition was more apparent in leg than in arm; and after each seizure, this loss became more marked.

December, 1896, rectal incontinence began, followed soon after by cystic incontinence. Accompanying these conditions were complete paralysis of the extensor and flexor muscles of the toes of the right foot, and the paresis above in leg, trunk, arm, forearm and side of face on the same side. There were no headache, vomiting, or constipation, and mental faculties were not disturbed. At this time the pot. iodide was prescribed, and after a short time the dose was increased to half an ounce each day. This medication was resorted to from time to time for several months. At first under this treatment the patient improved, spasms and post convulsion numbness became less, though there was rectal incontinence during the time.

After several months the symptoms, that is, convulsions, paresis, incontinence became as severe as before. On March 15, 1897, Dr. Stratton trephined the skull at the upper extremity and a little behind the fissure of Rolando, i.e., over the upper part of the ascending parietal convolution, the trephine opening overlapping the fissure. Upon removing the bone button and incising the dura a tumorous mass bulged into the opening. The opening was enlarged by removing two other buttons with the trephine and the use of the rongeur forceps. The tumor, which proved to be a fibro-sarcoma, was easily dissected away from its bed. In fact, as soon as the dura was incised the brain almost pushed it through the aperture in the skull. The cavity was subsequently packed and the dura stitched, only leaving an opening for the purpose of removing gauze and redressing. The cavity in the brain filled in about a week. Convulsions ceased and paresis improved. In December, 1897, performed a second operation for the purpose of separating and cutting away scar tissues in the wound which were causing some disturbance. While so doing the doctor found another small fibro-sarcoma attached to the falx cerebri and longitudinal sinus. He clamped the longitudinal sinus on each side of tumor and ligated and removed section with tumor. Patient lived only a few days after this operation. Post mortem showed that clot formed from the posterior ligature back to lateral sinus, also in straight sinus, but there was no clot in front of the anterior ligature.

In citing a few cases that have come under my personal observation,

I will mention that of Mr. L., who was caught by a revolving band and hurled with great violence to an iron floor where his forehead struck a projecting iron bolt, causing a fracture of the frontal bone, and pushing some of the fragments into the brain. Many of the loose spiculae we removed and the membranes and brain were uncovered to the extent of a couple of inches. The entire frontal bone was movable over the brain. The dura mater was lacerated and some of the brain pouted between its edges. I removed about one dram of loose brain, irrigated the wound, united some of the tissues, inserted drainage tubes, and packed with gauze. The patient was at first unconscious, but within a few hours regained sensibility. He suffered no pain for thirty-eight days. He had no temperature. The wound closed fairly well; kept a portion of the wound open for drainage, as there was constant suppuration. Wound was irrigated daily and packed loosely with gauze. On the fortieth day the irrigation of the brain was followed by severe pain. Within twenty-four hours the temperature rose to 106 degrees. On the forty-second day the patient died in delirium. Post mortem showed the breaking down of the white matter through the frontal lobe, and inflammation of almost the entire brain.

In this case the laceration of the brain would not repair itself. The injury existing in that latent region, the frontal lobe, there was no impairment of motion or of sensation for nearly forty days, at which time pain began, but was undoubtedly the result of inflammation through the brain, and pressure upon nerves leaving that organ. There was no impairment of memory until the elevation of temperature. I think the excruciating pain and inflammation following were caused principally by too forcible irrigation.

W. O., East Oakland, aged 10, fell a considerable distance, striking a rock and fracturing the adjacent parts of the frontal, sphenoidal, temporal and parietal bones on the right side. They were depressed about an inch, causing complete unconsciousness. Used chloroform as an anaesthetic and made a generous incision over the part, and exposed the fractured skull. Trephined the frontal bone, the trephine only slightly overlapping the fractured part. By the means of a bone elevator, using the solid frontal as a fulcrum, the entire depressed side of the skull was elevated to the proper level. Soon after ceasing the anaesthetic the patient regained consciousness. The periosteum was stitched with catgut and the external wound with silk. Drainage was kept up for two days, and patient left hospital in ten, requiring no further treatment.

Mrs. E. aged 25. Epileptic; convulsions daily. Had no scars on scalp, no depression of bone or pain about skull. Was gradually becoming unable to use her tongue, and could not articulate well. The tongue became clumsy, though the memory was excellent. Placed her in the hospital, treated scalp antisceptically and mapped out the fissure of Rolando on left side. Administered chloroform and made an oval incision over the fissure; the convexity being upwards and forward. Separated the periosteum from bone and trephined well down to the end of fissure. I cut the dura mater with trephine, examined brain, but could not distinguish anything abnormal. Packed the wound loosely with gauze and bandaged. Did not remove the dressing until three days had passed. Irrigated with sterile water and redressed.

It was thought by myself and associates that the patient, up to this time, had improved in speech. On the fifth day, however, she could only speak indistinctly; on the sixth only a part of a sentence; on the seventh only a word; on the eighth not at all. There was no elevation in temperature or pulse; no change in pupil. The memory, as I learned afterwards, was excellent. Administered chloroform, opened flaps, removed with curette a large amount of necrotic granulation tissue; irrigated the wound gently but thoroughly outside and inside of dura; dressed over dura with sterile gauze, outside of this iodoform gauze and absorbent cotton. These were retained by a loose bandage. This dressing caused no pressure on brain, but applied only as an absorbent and protection to an open wound communicating with the brain.

On the first day following the dress-

ing the patient could speak a word; on the second a part of a sentence; on the third, almost a complete sentence, and on the fifth better than she had during the previous two years. It was subsequently admitted by patient and relatives that her speech was greatly improved. The cause of the temporary loss of speech was too much a dressing in the trephine hole, in addition to the unhealthy granulation tissue and pus. When these were removed speech returned. The patient recovered, though she had one convulsion at the end of three months. I have been unable to follow her history further as she is no longer a resident of our city.

Mr. G., a horseman, aged 32, was struck upon the side of the head with a beer mug, which fractured the parietal bone. The scalps had been sutured. A week after the accident he called upon me; found him with temperature of 102 degrees; high pulse and flushed face. He complained of pain. His speech was thick and so muffled that he could scarcely be understood. I thought he had been drinking, but he told me that he had not taken anything alcoholic since the day of the accident. His breath and other circumstances indicated his statement to be truthful. Removed the stitches and washed away a large amount of ill-smelling pus. Found a depression in the skull to the extent of about two-thirds of an inch. The depression bone was denuded of periosteum, and extended well down to the extremity of the fissure of Rolando. The line of fracture was about two inches in length and one and one-half in breadth. Placed him in hospital and ordered his head to be shaven and antiseptic dressing applied. Twenty-four hours following his visit to me I trephined at the lower end of the fracture, the trephining only slightly overlapping the fractured bone. Raised the broken fragments and removed small pieces of loose bone, exposing the dura mater. Refreshed the stitched up flaps; inserted drainage tube at each end of wound. During the succeeding 30 days removed a considerable portion of necrotic bone that was too deficient in circulation to carry on vitality. It required nearly two months for the bone to repair and scalp unite, although he did not remain indoors more than two weeks. Four days after trephining and elevating bone his speech became clear. Before trephining he and his friends recognized the unusual thickness of his speech.

In February of this year, Mr. J., of Oakland, received an injury to base of skull, either by being struck by a bludgeon or falling and striking the occiput on edge of pavement. He was at first unconscious. He had hemorrhage from left ear and dilations of one pupil. The hemorrhage continued for several days. There was also an outflow of a clear liquid through the meatus auditorius. Found a contused wound near the occipital protuberance. Any pressure on this would causes severe pain within the skull. Applied ice to skull and placed him on milk diet. In three days pupil became normal; both pupils responded to light. The left ear was almost entirely deaf. Remained within doors for four weeks; at the end of which time he took short walks. Complained of vertigo. Memory good. At present he is 25 pounds lighter than formerly. Sleeps very well. Slight vertigo; deaf in left ear; irritable; unable to smoke or drink, as either makes him sick or nervous, even though partaken of lightly.

Mr. F. M., of Los Angeles, aged 18. Suffered from epilepsy since he was 4 years of age, his convulsions varying in number from six to twenty a month. He received an injury to his head when two years of age, but did not experience any inconvenience until two years afterwards, at which time convulsions took place and have continued ever since. I saw the patient last year with Dr. Hill, of San Pedro, and learned that there was a slight paresis of right side also. I learned of an injury to his head during his infancy. Found a flattening over the frontal, but no scar on scalp. As the convulsions were growing worse we concluded that trephining could not do much harm, and might possibly benefit the patient. On the 23rd of last month, (March 1898) after the usual preparations, I, with assistance of Dr. Hill and his colleagues, trephined the frontal bone close to the left side,

also the parietal over the fissure of Rolando. Between these two apertures cut away the bones with a rongeur forceps. In one instance the teeth of the trephine cut the dura. Enlarged the wound in the dura and examined the brain. This organ seemed to possess a low vitality, but could not discover any scar tissue, stitched the dura with a couple of catgut sutures and closed up the external wound, except at each end where rubber drainage tubes were inserted.

Dr. Hill, who had charge of the patient, wrote me on the 24th of this month that the patient had but one convulsion since the operation, ten days before, and that was while he was recovering from the chloroform, immediately after the operation. Dr. Hill also stated at the time of writing, "I will send him home to-day, ten days after the operation. The temperature is now 98 6, and pulse 76. The drainage tubes were removed four days after the operation. Patient and friends very much gratified at result."

Since the above communication I have learned that the young man has had several convulsions. I do not know that in any case of epilepsy have I at all benefitted my patient by operations, save for a few weeks, or, at the most, a few months following the procedure, and I have derived as favorable results from removing ovaries as I have from the trephine.

MASSAGE FOR SPRAINS AND INTESTINAL DISTENTION.

Dr. Van Arsdale recently stated that during four years he had studied the treatment of sprains by massage, treating over twelve hundred cases of this kind. He claimed that the patients had been cured in as many days as weeks were required by the old treatment. Many of them had been able to walk within an hour after receiving a sprain of the ankle. He also spoke of the valuable aid abdominal massage had rendered him in treating intestinal distention and obstruction after laparotomy. In many cases of intestinal colic in infants, immediate relief would be afforded by massage of the abdomen. Further than this, he had employed pelvic massage quite extensively in gynaecological practice. It was true that he had not been able to make the uterus that had been prolapsed for some time stay up in the pelvis, but he had been able to relieve the pain produced by old adhesions, or the symptoms resulting from various forms of uterine displacement.

THE DIAGNOSIS OF MALARIAL AND QUININE AMAUROSIS.

Dr. Juan Santos Fernandez, of Havana, in an article on this subject (Journal of Eye, Ear, and Throat Diseases for April), says that, as a matter of fact, the diagnosis between quinine and malarial amblyopia can only be made by an examination of the fundus of the eye. It is by this method that we always find either retinal alterations like those observed in patients suffering from malarial disease, or simply ischaemic troubles, as in cases of quinine intoxication.

AN EXPLOSION OF POTASSIUM CHLORATE AND SODIUM SALICYLATE.

On April 6th (Canadian Pharmaceutical Journal and Gazette, May) a drug clerk was engaged in rubbing up in a Wedgwood mortar a mixture of two parts of potassium chlorate and one part of sodium salicylate according to a prescription, when a terrific explosion took place, shivering the mortar into a thousand pieces, hurling the drug clerk back unconscious, and with a big gash on the cheek. The sleeves of his coat were torn into shreds. The door and windows to the right and left, some forty and twenty feet away respectively, were blown out with great violence, the contents of the window being hurled into the street. The shop caught fire, which was, however, soon extinguished. The unfortunate drug clerk was said to be in a precarious condition from shock. The quantities of the drugs used, to produce so terrific an effect, are not stated.

NEW TREATMENT OF PERNICIOUS VOMITING.

It is both interesting and important to know that in some cases vomiting, which has proved intractable to internal medicine, may be promptly relieved by the hypodermic injection of cocain hydrochlorate in the epigastric region. This practice is accredited to Pozzi, who has lately recorded five cases of the kind in gynecologic work. In all of these cocain given internally proved useless, while its effects by hypodermic administration were promptly beneficial. The amount used was approximately one-sixth of a grain once or twice daily immediately before feeding.

TRAINING THE SIGHT.

Mr. R. Brudenell Carter, F.R.C.S., in a lecture before the London Society of Arts (Medical Times, May), directs attention to the fact that acuteness of vision may be increased by training. He suggests that the average acuter vision of country over town children is due to the fact that the latter see chiefly large objects and under large visual angles, while the former are habitually attending to smaller and more distant objects, seen at smaller angles. He suggests, therefore, that school teachers should be instructed to test the vision of new pupils and record the same in a register, informing the parents of any defects observed.

SPECIALISTS AND PRACTITIONERS.

The Journal of Eye, Ear and Throat Diseases for April quotes from the Archives internationales de laryngologie, d'otologie et de rhinilogie the following regulations that have been adopted by the Medical Society of the Ninth District of Vienna: 1. The specialist is a physician who renounces the exercise of every other branch, with the exception of a very limited portion. 2. The specialist should not undertake any treatment without coming to an understanding with the ordinary physician of the family. 3. The ordinary physician should be informed of the diagnosis and his advice taken upon important interventions. 4. It is impossible for the ordinary physician to direct the treatment to be followed; the specialist should let him take part according to his ability. 5. The patient should not be referred by the specialist to a third physician, except with the assent of the ordinary physician.

THE RELATION OF THROAT AND NOSE AFFECTIONS TO GENERAL MEDICINE.

Dr. W. F. Chappell (Laryngoscope, March; Denver Medical Times, April) calls attention to the common dependence of throat and nose affections on the state of the general system. Atrophic rhinitis, enchondroma, perforation of the nasal saeptum, recurring epistaxis, etc., are often secondary to contagious affections; marked redness of surrounding tissues, to latent gout or rheumatism; primary syphilitic lesions of the upper air-passages have been mistaken for diphtheria, and congenital syphilitic ulcerations of the nasal septum, soft palate, and larynx for tuberculosis and malignant disease. Acute rhinitis and laryngitis often spread downward to the trachea and bronchi, and conversely, though laryngeal tuberculosis is nearly always secondary to that of the chest. Gastro-intestinal disorders play their part by causing venous congestion, especially round the base of the tongue, with glandular swelling there and on the posterior pharyngeal wall. Lithaemia is also responsible for much glandular-tissue increase. Hysteria is a factor in the production of aphonia, oesophagismus, and dysphagia; nasal headaches are often due to improper drainage or disease of the accessory sinuses. In all these conditions, full scope must be given to internal medication and topical treatment not allowed to usurp exclusive dominion.

Professor De Dominicis has been forced to the conclusion that the mysterious cause which transforms inoffensive bacteria passing harmlessly through the organism into virulent pathogenic germs is the failure of the digestive apparatus to dispose normally of the food. Even the simplest, scantiest diet will produce putrid de-

composition if not digested, and the alimentary canal become a toxine factory and a fine culture-medium for the germs to acquire virulence in and entail serious complication. His extensive experimentation has established the fact that animals kept fasting recovered more rapidly, and without complications from acute infections and severe traumatisms, than others in the same condition, fed as usual or even much less than usual. He forbids all food to his patients in acute infections, especially in pneumonia, if there is any reason to suppose that the digestion will not proceed normally. Observations of 140 cases of pneumonia have confirmed the wisdom of this course, which has won for him the name of the "starving doctor." In every case it was noted that during the prolonged fast, sometimes a week in length, the patient partially regained the strength he seemed to have entirely lost before. De Renzi "also places fasting in the front rank of the remedies for arthritism."

Partial Resection of the Eyeball.—Dr. Ernest Hall (Annals of Surgery, May) reports a method which he considers fulfills the desideratum—viz., immunity from local and sympathetic inflammation, with satisfactory movement of the artificial eye. The strategic parts of the eyeball, he says, are the ciliary region in front and the sclero-optic junction behind. The principal traumatism and sepis leading to loss of function are in the former location, and the conveyance of trouble, sympathetic or septic, takes place through the latter. With these parts, the retina, and the vitreous removed, the remaining parts of the eyeball, he holds, should be non-irritating and harmless, and serve with attached muscles and motor nerves as a movable pad upon which the artificial eye can rest. He thus describes his operation. The instruments required a speculum, sharp-pointed scissors, catch forceps, and curette.

Complete Anæsthesia—With speculum in place, the scissors are inserted about twenty-five millimetres (2.5 mm.?) behind the sclero-corneal junction, sufficient to include the ciliary body, and complete section made, thus removing the whole front of the eyeball. The vitreous is then evacuated and the retina removed with the curette; the haemorrhage here is usually profuse, but easily controlled by hot water and pressure. The speculum is then inserted within the ball, and thus made to hold both eyelids and edges of the sclerotic opening. The point of entrance of opening of the optic nerve is then grasped with toothed forceps and the scissors are inserted as close to the nerve as possible, to avoid wounding the ciliary arteries, and a circular incision is made in sclerotic, freeing the optic nerve, which is then drawn forward and severed about twenty-five millimetres (2.5 mm?) from the sclerotic junction, thus removing a section of the optic nerve. A laryngeal head-mirror is useful here to concentrate the light within the sclerotic cavity. A piece of gauze is inserted and the sclerotic and conjunctiva are closed vertically in order to give normal tension to the internal and external recti, as lateral motion is of greater importance than vertical. The after-treatment is simple, the gauze may be removed in twenty-four hours. The cavity fills with blood, which becomes partly organized, thus preventing complete collapse of the sclerotic. An artificial eye may be inserted within two weeks.

The resulting advantages alleged are greater prominence of artificial eye, perfect movement between thirty-five degrees laterally and 20 vertically, also diagonal movement, and retention of the normal secretion from the lacrymal ducts, etc.

EDITORIAL.

We have been requested to call attention to the meeting of the Canadian Medical Association, which takes place on the 17th, 18th and 19th of August in the historic city of Quebec. No doubt many of our Northwest brethren will combine business and pleasure and reserve their summer outing for attendance at this meeting. Cheap fares are secured from the different railway companies, and all vis-

itors may rely on a hospitable welcame from our Quebec confreres. Notice of the meeting appears in our miscellaneous column.

MISCELLANEOUS

CANADIAN MEDICAL ASSOCIATION

Sir,—There is no man so deserving of a holiday as the hard working physician who has had his nose to the grind-stone from early morning till late at night. It is not only a privilege but a duty to relax one's energies at least once a year and take an outing. Having made up one's mind to go away for a bit, the next question is where to go, for one likes to gain some mental profit as well as physical vigor. This year the Canadian Medical association offers peculiar inducements to the busy man by meeting in the historical old city of Quebec on August 17, 18, and 19th, next. This will give to the physicians throughout the Dominion, an opportunity to visit, at a trifling expense, one of the most picturesque parts of our own—our native land with profit to himself and benefit to his patients. It too will enable the English and the French to become better acquainted, thus helping to bring about a better understanding of each other.

The President, Dr. J. M. Beausoliel, is putting forth every effort to make the meeting a success. The local committee of arrangements under the chairmanship of the vice-president, Dr. Parke, ably assisted by the local secretary, Dr. Marois, are doing good work toward making the visit of their medical brethren enjoyable. It has been whispered that a trip to Grosse Isle is probable as a part of the entertainment. The officers of the association are confidently looking forward to a large and enthusiastic gathering. For particulars address F. N. G. Starr, general secretary, Toronto.

SANMETTO IN CYSTITIS, PROSTATITIS AND IRRITABLE BLADDER.

I have been using Sanmetto in my practice for two or three years. I have used it in a good many cases of cystitis, prostatitis and in all cases of irritable bladder, with the most gratifying results.

R. T. HOCKER, M. D.,
Ex-Pres. So. Western K'y. Med. Assn.,
Arlington, Ky.

INFANT FEEDING AND FOODS.

According to Dr. J. Frank Kahler, who has recently prsented a paper on this subject to the Guernsey Medical Society, there is no cause for infant mortality so great as improper foods and feding.

Let us first try to impress upon mothers the truth that they will be saved many hours of wakefulness, anxiety, and, perhaps, agony, by regular habits in feeding infants, and supply, if possible, Nature's food for at least the first six months of their existence. Nothing else except this and water.

Infants should, generally speaking, depending some on weight and vitality, be fed every two hours from 5 a.m. to 10 p. m., until they are three months old; every three hours until six months old; and every four hours until weaned at eleven months.

In order that we may do the most good for a given case afflicted with some form of bowel trouble, it is essential that we determine:—(1) The kind and manner of food given. (2) Condition of discharges and frequency. (3) Constitutional symptoms, if present.

The kind of diet prescribed will depend wholly on the condition of the discharges and the constitutional symptoms.

Vomiting frequently.

with a rather cachectic expression, would indicate gastric trouble; while a fretful, anxious look, accompanied by tenderness in the umbilical region, and thin but not frequentstools,would indicate enteritis. Colitis is accompanied by frequent muco-sanguineous discharges and tenesmus, with small actions and often a peculiar musty odour. If the inflammation involves nearly all of the alimentary tract, we have the above symptoms present in an aggravated form. Of paramount

importance it is to know:—

1. The chemical reaction of the alvine Edischarge—i.e., whether acid or alkaline, and for this purpose I always carry litmus paper with me. If the reaction is excessively acid, we may know it is due to the carbohydrates; consequently the cessation of this class of foods would be indicated; if very alkaline, we may infer at least that this is due to the ingestion of the albuminous foods, and these should be forbidden.

2. The color: If this be green, we may infer that the infant has eaten too much of the albuminous foods, or has taken its milk too fast; consequently the caseine has not been digested, and is an excellent culture-medium for the germs which produce the green color.

3. Odor: If this is scarcely perceptible, or slightly sour, the cause is certainly the starchy foods, while if very offensive it must be due to the proteid foods.

4. Consistence: If the discharge is very thin, with little mucus and no blood, and not very frequent action, this would indicate that the seat of the trouble is in the small gut; while if the consistence s somewhat heavier and the discharge contains mucus with perhaps some blood, accompanied by tormina and tenesmus, the lesion is in the colon. If in the colon, intestinal lavage is indicated with an astringent soluton, such as chloride of zinc or a decinormal sterile salt solution. If in the gut, astringents should be given by the mouth.

5. Digestion: If solid particles are seen we may at once determine what food to withhold,or at least modify the there is a high temperature, it is cer-

6. Constitutional symptoms: If manner of feeding it.

tainly due to the albuminous foods, for the carbo-hydrates do not produce marked constitutional symptoms. Therefore, the indices to the kind of food required are the location of the trouble, the chemical reaction,and the odor.

Foods Are Divided Into Four Great Classes.

two of which only we need consider here, viz., proteid or albuminous, and carbo-hydrate or starchy foods.

In the infant under three months the salivary secretion is very limited, and it is not at all abundant until the seventh month; and, since this secretion does not act on raw starch at all, we may draw our own conclusions. Pancreatic secretion acts on raw starch; but this is not formed in the infant under four months. Therefore, if an infant is disturbed with gastritis accompaned by darrhoea,the action being acid and not offensive, we may be positive that the carbohydrate foods are producng the disturbance.

We may have green discharges after feeding the starchy or proteid foods, because this color, as stated before, is very often due to germ action, and an excellent way to neutralize this condition is by the dilution of food with lime-water. I trust I have now made clear the guides by which we may determine the kind of food indicated. I shall, therefore, first take up the carbo-hydrates and the manner of preparing them.

Flour ball: Put one pint of flour in a linen sack, add enough salt to season, and boil for twelve hours, after which remove the pastry part around the ball and grate the central part, to which add enough boiled water to make it of the consistence of cream, and feed.

Oatmeal or Barley Water.

is made by taking one tablespoonful of either, crushed, to which add one pint of hot water and allow to simmer for thirty minutes; strain and use. The former has slightly laxative properties, while the other is slightly astringent and will aid in more lightly coagulating milk albumen or casene. I thing the best proportion in which to use either of the above waters or plain water with milk is, for the first two months of an infant's existence, one part milk and two parts of water; third and fourth months, one of milk and one of water; fifth, sixth, and seventh months,two of milk and one of water. Great dilution not only aids the natural juices but also aids in the elimination of posons.

Rice grains,one tablespoonful boiled in one part of water for two hours; strain and add one-fourth this quantity of plain milk and one teaspoonful of cream.

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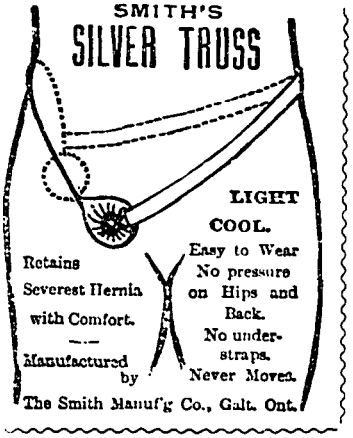

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