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THE

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THE OLDEST MEDICAL JOURNAL IN THE DOMINION.

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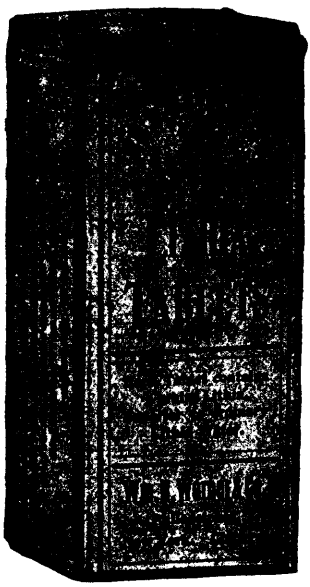

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Ferrol, an honest emulsion of cod liver oil, has been on the market for some years and given great satisfaction. It is a Canadian preparation, made from the purest and best oil procurable. The formula is on every bottle and it deserves the support of the medical profession. The manufacturing of this preparation has lately been taken over by the Ferrol Company of Toronto. It is the intention to push the sale in every legitimate way possible, but always and only through the medical profession and press.—*The Canadian Practitioner.*

Some years ago there was introduced to the medical profession in Canada a pharmaceutical product named Ferrol. The name was indeed a most happy one, as giving its composition at once, that of cod liver oil and iron. For some reasons Ferrol was at that time not pushed. Now, however, fortunately for both physician and patient, it has been revived and taken hold of by a company of strong capitalists who intend pushing it, as it ought to be. Ferrol can be produced either plain, consisting of phosphate of iron, phosphorus in minute quantity, glycerine and cod liver oil, or with creosote, the latter ingredient so combined as to form one of the most palatable products on the market, one which can almost be guaranteed not to cause the usual nausea and after eructations so frequently the case with cod liver oil in any other form but that of Ferrol. The Ferrol Co. of Toronto, Limited, are putting their article before the profession in a strictly ethical manner, advertising it only in the medical press, thus appealing to the profession in the strongest possible manner. We take pleasure in making this preliminary announcement, and add that Ferrol can be procured from any first-class druggist.—*Canadian Journal of Medicine and Surgery.*

There has been on the market for some years, a preparation which was very favorably received by the profession, but owing to changes in management, and some internal difficulties, the supply was irregular. Although all those who prescribed it had formed a high opinion of it, and kept repeating their prescriptions, a regular supply was not obtainable. This was a permanent emulsion of iron and cod liver oil, known as Ferrol. This preparation, as will be seen by our advertising pages, has been taken hold of in a thorough and ethical manner, and now physicians will be able to obtain the article demanded on their prescriptions. We can certainly recommend it to the profession as an emulsion of iron and cod liver oil that they can absolutely depend upon.—*Dominion Med. Monthly.*

We beg to call the attention of the profession to the preparation known as Ferrol—Iron and Cod Liver Oil. It is an excellent preparation, and when combined with creosote most useful in those cases where these products are indicated. The manufacturers are appealing to the profession alone and not to the general public, desiring in the most ethical manner possible to have its merits fully tested and reported upon.—*Medical Review.*

THE FERROL COMPANY OF TORONTO, LIMITED.

The Canada Lancet.

VOL. XXXI.] TORONTO, APRIL, 1899. [No. 8.

RECENT ADVANCES IN BRAIN SURGERY.

BY HENRY O'NEILL, M.D., M.CH.,

President of the Branch; Visiting Surgeon, Belfast Royal Hospital.

This department of surgery always demands our most earnest attention because of the serious consequences which may arise from apparently trifling injuries to the head. Head injuries are of special importance because they may not be limited to the outer soft parts and the bones, but may affect the brain and its membranes. The brain is well protected by a dense fibrous scalp and firm hard skull. Within the bony case lies the brain enveloped by its membranes, and protected by fluid outside the convolutions and within the ventricles. Inflammation of the brain and its membranes usually follows injuries of these structures; serum is exuded, which produces swelling and pressure, and can be relieved only by an operation such as trephining. Occasionally the intracranial pressure is relieved by the escape of the intracranial blood and cerebro-spinal fluid into the spinal canal. Should the pressure increase, the functions of the brain become interfered with, or they may be completely destroyed. This change or loss of function may affect the motor, sensory, or intellectual functions of the brain, and produce spasm or paralysis, hyperæsthesia or anæsthesia, mania or coma. At first the change or loss of function may be local, and cause paresis or paralysis of an arm or a leg, or half of the face, alteration or loss of speech. If the brain injury is severe, complete loss of function may occour and death supervene. Sometimes the alteration will be obscure, and is functional rather than organic, and will produce headache, epilepsy, or insanity without any apparent change in the substance of the brain. Epilepsy may be caused by the pressure from a blood clot following head injury with or without a fracture of the skull.

LOCALISATION OF FUNCTION IN THE BRAIN.—The localisation of function in various parts of the brain has been well recognized during the past twenty years. Cerebral surgery has become a most important branch of general surgery. Through the scientific labors of Horsely, Ferrier, and Macewen in Britain, Broca in France, Fritsch in Germany, marvellous results have been obtained in the surgical treatment of diseases and injuries of the brain. Until quite recently operations on the brain were seldom successful, the chief reasons being imperfect knowledge of the cerebral motor areas and want of aseptic precautions in the treatment of wounds.

MOTOR AREAS.—The chief motor areas in the brain of the monkey, as demonstrated by Horsley and Schafer, have been shown by physiological experiment and *post-mortem* examination to correspond closely to the same cortical centres in man.

The upper third of the convolutions in front of and behind the fissure of Rolando corresponds to the centre for the movements of the leg, the middle third corresponds to those for the arm—beginning at the upper end for the shoulder centre, the middle part for the elbow centre, and the lower for the hand centre.

In the lower third lie the face centre and the centre for the mouth and larynx. The centres for the head, leg, and trunk are situated chiefly on the median surface of the hemispheres as well as on their external surface. Broca's centre for speech lies just in front of the end of the

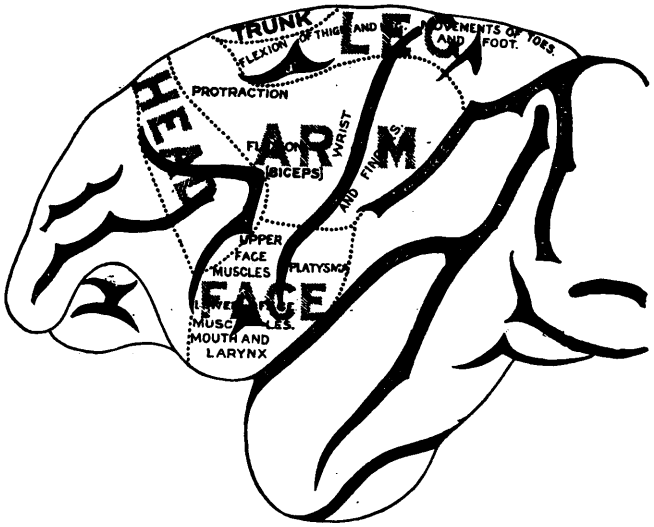

Fig. 1.—Motor areas on the outer surface of the brain (Horsley and Schafer).

fissure of Rolando, and in angle formed by the main trunk and the anterior limb of the fissure of Sylvius. The centre for vision is situated in the cuneus, a lesion of which produces blindness of the corresponding (right or left) half of both retinæ. The supramarginal and angular gyri are also concerned to some extent in vision. These same convolutions—supramarginal and angular—are the seat of certain mental processes, the loss of which produces sensory aphasia, agraphia, etc. The centre for hearing is probably situated in the middle and posterior parts of the first temporosphenoidal convolution. The centre for smell is probably situated in the uncus, near the lower part of the hippocampus major.

MODE OF ASCERTAINING THE RELATIONS OF THE CEREBRAL CONVOLUTIONS TO THE SCALP SURFACE.—The method of ascertaining the relations of the cerebral convolutions to the scalp surface which I consider best and simplest is that described by Prof. J. Chiene, in the *Edinburgh*

Medical Journal, 1893-94. In addition to the motor areas round the fissure of Rolando, we now as operating surgeons require to know the relations of the temporo-sphenoidal lobe in connection with ear disease, the supramarginal convolutions in puncture of the lateral ventricle, the angular convolutions in word blindness, the occipital lobe in lesions of sight. The relations of the whole brain, except the anterior extremities of the parietal lobes, have become a necessity for the operating surgeon. A simple easily-remembered, and trustworthy method of localisation is all-important. One free from the necessity of remembering exact angles or exact measurements in inches will save a burden on the memory, altogether apart from the fact that angles must vary in different shaped skulls (the fissure of Rolando various from 65° to 72° in its relation to the sagittal suture), and from the fact that the measurement in inches will vary with the size of the cranium and the age of the patient.

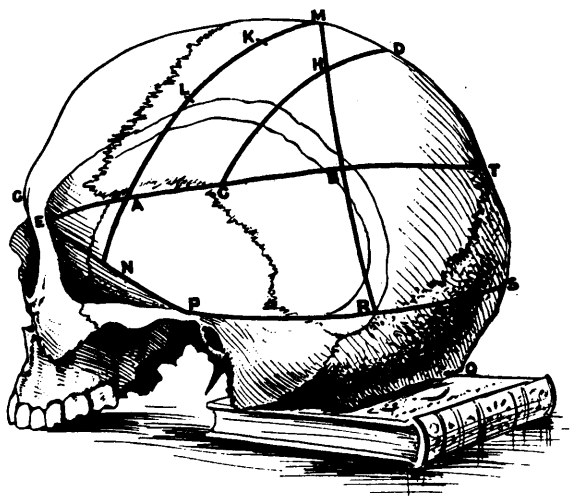

Fig. 2.—Diagram of cranio-cerebral relations (as described below). (From Prof. John Chiene).

The head being shaved, find in the mesial line of the skull, between glabella G and the external occipital protuberances O, the following points: (1) The mid-point M. (2) The $\frac{3}{4}$ point T. (3) The $\frac{7}{8}$ point S. Find also the external angular process E, and the root of they zygoma P, immediately above and in front of the external auditory meatus. Having found these five points, join E P, P S, and E T; bisect E P and P S at N and R, bisect also A B at C, and draw C D parallel to A M. The pentagon A C, B R, P N corresponds to the tempora-sphenoidal lobe, with the exception of its apex, whiah is a little in front of N M D C A corresponds to the Rolandic area containing the fissure of Rolando, the ascending frontal and the ascending parietal convolutions. A is over the anterior branch of the middle meningeal artery, and the bifurcation of the Sylvian fissure. A C follows its horizontal limb. The lateral sinus at its highest point touches the line P S at R. M A = the

precentral sulcus, and if it be trisected at K and L these points will correspond to the origin of the superior and inferior frontal sulci. The supramarginal convolution lies in the triangle H B C, the angular gyrus is at B

Professor J. Symington, Belfast, has recently described a simple and accurate method, which he has found useful in localising the motor areas of the brain

I hope the members of this Association will soon have an opportunity of judging of its undoubted value in surgical practice, when he gives us a demonstration similar to one he gave in Edinburgh before the members of the British Medical Association in July last, which so greatly interested all those who saw it.

THE ASEPTIC TREATMENT OF CEREBRAL WOUNDS IN THE OPERATION OF TREPHINING.—The day before the operation, first, shave the scalp; secondly, wash the scalp thoroughly with soap and warm water scrub well with a nailbrush. Particular stress must be put upon the scrubbing, which should be done vigorously and carefully, as mechanical friction is the most efficient means of removing the superficial layers of the epidermis, for it is in these layers chiefly that we find the impurities adhering which contain the infecting micro-organisms. Rinse with sterilized water and dry, next rub over with turpentine, afterwards with ether and alcohol, and lastly with a solution of perchloride of mercury (1 in 2,000) or carbolic lotion (1 in 40). Cover the scalp with eight layers of gauze sublimate dressing secured by a bandage, which should remain on the scalp until the time for operating.

The patient is placed on the operating table in a semi-recumbent position with the head raised, lying between sterilised linen sheets, so as to leave only the region to be operated on uncovered and freely accessible. All instruments and dressings must be cleaned and sterilised as well as the hands and finger nails and arms of the operator and his assistants. The operator and assistants should wear sterilised linen overalls.

Before commencing the operation the surgeon should map out the fissures and motor areas on the scalp by means of an aseptic aniline pencil. Chloroform or bichloride methylene should be administered with a Junker's improved inhaler, and 2 minims of inject. morph. hypoderm. given immediately before the anæsthetic.

TECHNIQUE OF THE OPERATION.—It is important to mark three points on the bone—first, the place where the centre pin of the trephine is to be applied; secondly, the upper end of the fissure of Rolando; and, thirdly, the lower end of the same at points just outside the flap in order that the fissure may be recognized after the flap has been raised; this may easily be done by using the centre pin of another trephine.

THE FLAP.—The flap to be raised should be horseshoe shaped, with a diameter of about 3 inches. The base of the flap should be below on account of the blood supply coming from that direction; the flap of periosteum should be raised with the scalp. The hæmorrhage can easily be arrested by grasping the bleeding points with torsion forceps. The trephine opening should be at least an inch and a half in diameter, and this can be enlarged by means of a rongeur forceps to the desired extent.

Before enlarging it the dura mater should be separated from the bone by Horsley's dural separator, which can also be used for exploring the inner surface of the skull.

RESECTION OF THE SKULL.—The scalp is freely incised down to the bone, the flap remaining attached to the latter. By mallet and chisel the bone is almost cut through at every point except its base, the separation being completed by an osteotome; it is then raised by an elevator, the base being fractured, forming a kind of window in the skull by turning back the flap. In this manner a large area of brain substance can be exposed. When the operation is completed the bone and flap are replaced, and the skin sutured; the base of the flap should be in that part of the tissues which has the largest blood supply. A surgical engine or an electro-motor with a saw may be used instead of the chisel. As a rule it is best to open the dura mater on a line parallel with the edge of the bone a quarter of an inch from the margin, care qeing exercised not to wound the large veins beneath the dura mater.

Hæmorrhage from the middle meningeal artery may be arrested by passing a curved needle through the dura mater under the vessel, and securing it by a fine catgut ligature. After opening the dura mater observe if there is any bulging of the brain substance into the trephine opening; if so, it may be caused by a tumor, an abscess or an internal hydrocephalus. Lividity or yellowish tinge will indicate a probable tumor in the cortex; absence of pulsation in the brain is evidence of a arge tumor, abscess, or cyst. Should the brain substance be abnormal, the entire affected portion should be removed. It is better not to drain the wound after cerebral operations, where strict aseptic precautions have been observed. In gunshot wounds, abscesses, and hæmorrhages drainage is necessary.

In many cases the bone, or at least parts of it, can be replaced, and the flap of skin should be closed by interrupted silk worm gut sutures.

Dressings.—The wound should be dressed with sterilized gauze, kept in position by sterilized gauze bandages. The patient should be placed in bed in a cool, quiet, darkened room, with the head raised on a high pillow, and an icecap applied to the scalp. The dressings should not be removed for at least a week, unless discharges p ss through them, or the temperature exceeds 100° F., or the patient complains of severe pain and restlessness. The food should consist chiefly of milk, with beef-tea and light soups. The bowels should be kept regular by means of a saline purge, and a catheter used to empty the bladder if necessary.

The treatment I adopted in the cases of fracture of the skull, I consider is according to the most recent and best methods, and has been fully justified by the results obtained. In each case I trephined the skull at the seat of fracture and elevated the fragments, although in one of the patients there were no symptoms of pressure on the brain.

Some years ago leading surgeons taught that t. ephining should not be performed in patients suffering from depressed fracture, where no symptoms of pressure were observed, such as paralysis, convulsions, or mental disturbance. In such cases head symptoms often developed after months or years, which rendered the patients liable to much suffering and

early death. No advantage is likely to arise from operation when these urgent symptoms are the result of a general cerebral contusion. The elevation of depressed bone is a radical measure of relief, because with the removal of the cause of the symptoms the possibility of the continuance or recurrence is removed, and the removal of a clot from the surface of the dura mater is made effective by the ligation, if necessary, of the ruptured vessel. As a rule, it may be stated that operation in head injuries should generally be performed in depressed cranial fractures, uncomplicated epidural hæmorrhages, and seldom performed in subdural lesions, whether of brain or pio-arachnoid membrane.

If, in accordance with the older clinical rules, operation is seldom to be resorted to in the general class of intracranial injuries, it must not be overlooked that the decision to be inactive on the part of the surgeon carries with it a very grave responsibility, since an error in judgment may deprive the patient of a chance of life by increasing the danger of an already critical condition. This will, I think, be apparent from the comparative safety of exploratory puncture when conducted as I have described by modern methods.

The acceptance or rejection of an operation as a method of treatment when brain lesions are independent of accessible cranial fractures is to be decided in each instance upon clear and specific evidence. Intracranial exploration will be proper or improper as it is made with or without a sufficient reason, and not as it may conform to an opinion based upon a wide generalisation of results that it is a good or a bad procedure.

There are cases in which the remote results of intracranial injuries demand as careful treatment as those of recent origin. These include paralysis and convulsions which are often due to the imperfect absorption of surface hæmorrhages or superficial or ventricular effusion from the original contusion. An explanatory examination of the cranial contents is certainly justified when permanent functional derangements succeed the primary effects of intracranial injury. The risk of danger in performing cerebral operations should always be carefully considered by the surgeon. In the treatment of subdural lesions the operation is in itself a source of danger, and should be performed only when there is a fair hope of a favourable result. There can be no question that our duty is to elevate each depressed fracture, to remove foreign bodies from the brain or epidural clots from the cranial cavity, because less danger is incurred by the operation than is involved in the continuance of the morbid condition which it is sought to remedy.

In conclusion, I thank you for your kindly and thoughtful attention during the delivery of my address, which has encouraged me to hope that you will by your cordial co-operation with one another still further promote and extend the principles which have done so much to render possible recent advances in brain surgery. I acknowledge with pleasure my obligations to Lord Lister, Professor Victor Horsley, Professor J. Chiene, Professor W. Macewen, Professor P. Redfern, Professor J. Symington, Dr. J. Harold Stiles, Dr. W. W. Keen, Dr. J. William White, and others whose writings and teachings have contributed so much to the relief of human suffering and the advancement of the science and art of surgery.

CORRESPONDENCE.

INTERPROVINCIAL REGISTRATION.

DEAR SIR,

The present time is a most favorable one for the movement which is being so ably furthered by Dr. Roddick, our popular and influential representative in the House of Commons. Not only have we Sir William Hingston to support him in the Senate, but at the present time the Provincial Legislatures are all in accord with the Federal Parliament, and will do almost anything which the latter may ask of them. The colonial secretary Mr. Jos. Chamberlain is most favorably disposed towards Canada and with his immense influence could obtain for us any legislation we might require. With the whole profession in Canada in favor of it, and the Provincial Medical Boards and Legislatures raising no objection to it. I think that there would be no insurmountable difficulty in getting a short Act passed by the parliament of Canada and even, if necessary, by that of Britain.

I would however like to point out a much simpler method of obtaining what they desire; namely by changing the name from Dominion Board to University of Canada. There was nothing in the British North America Act to prevent the Parliament of Canada from granting a charter to a University of Canada, with power to grant degrees in medicine, the holders of which would be entitled to practise in all parts of Canada. The Act granting this charter could if necessary be ratified by the British House.

As the University of Canada would be an examining body and not a teaching one it would be in no way interfere with the rights of the Provincial Boards or Medical Schools which would continue to carry on their work precisely as they are doing at present, for those who were satisfied to practise in their own province only. Those who wish however to practise all over the Dominion must pass through a uniform portal the barriers of which should be at least as high as those of any provincial board. And that portal would be the matriculation and final examinations of the University of Canada. Even when armed with this degree its holder must obey the same regulations and pay the same fees annually as the other practioners of the province in which they desire to practise. By calling it the University of Canada it would become a national institution and an object of national pride, so that the Government of Canada would come to its aid financially during the first few years, after which it would be self supporting. I do not see any difficulty either in the matriculation or final examination. Some man of high standing would be appointed in each provincial capital or chief city to hold the entrance examination simultaneously. Sealed examination papers would be sent to him some days before but would only be opened by him after all the candidates had entered and the doors were locked.

This would be taking place at the same hour and minute in the seven distant cities, from Vancouver to Halifax. When the allotted time was up the papers would be signed and sealed by the examiner and forwarded to the central committee, who, without knowing the writers' name, would apportion the merited marks, and forward certificates. On presentation of these certificates and proof of five years study of medicine the candidates could come on for a fixed date every year before the examiners of the University who would be chosen from the present provincial examiners or other eminent teachers. As to the clinical examination the committee on clinics together with all the canditates could take a two hour and a half ride down to Montreal and hold the examinations at the big hospitals, and return to Ottawa the same or the following day. As soon as the results of these examinations had been added to the others the convocation could be held and the degree be signed and given by the Governor-General. The examinations might be more severe on practical subjects for those who had been over ten years in practice, and more severe in theoretical subjects for those who had just left the medical school. The fees should not exceed fifty dollars which with a government grant of ten thousand dollars a year for ten years would be ample to defray all expenses, as examinations would be held only once a year in the month of June.

Trusting that you will lend the weight of your personal and editorial influence towards remedying the present annualous state of affairs.

I remain yours sincerely,

250 Bishop Street, Montreal A. LAPTHORN SMITH.

Hyperchlorhydria is a condition in which the stomach secretes an excessive amount of gastric juice when digestion is not in progress, especially at night, this gastric juice being either normal or containing an excessive amount of HCl.—Prof. Ewald (*Brit. Med. Jour.* 1898, ii. 1324) first employs tonic and hygienic regulations for the general condition, and, secondly, regular evacuation of the contents of the fasting stomach, and the introduction by means of Einhorn's stomach spray, or the stomach douche of a half per cent. solution of $AgNO_3$. During the day he gives every two hours a teaspoonful of a five per cent. solution of potassium iodide and bicarbonate of soda, and allows only rectal alimentation, in order to avoid all irritation of the gastric mucous membrane. He has found, after a large experience, the ordinary sedatives, bromides, zinc, belladona, codeia, morphia, and hyoscyamus, of no use. Dr. Joslin (*Boston M. and S. J.*, 1898, cxxxviii., 389) has found tincture of nux vomica the only drug of value in this condition. He gives ten drops three times a day, increasing one drop daily until a maximum daily dose of sixty to ninety drops is reached. At the same time outdoor physical exercise is enjoined, and massage employed where the motility of the stomach is at fault. Should these measures fail, the stomach tube should be used.—*Bristol Med. Chir. Jour.*, Dec.

THE GENERAL PRACTITIONER IN RELATION TO THE INSANE.

BY ERNEST HALL, M.D., L.R.C.P., ENG.; FELLOW OF BT. GYL. SOC., VICTORIA, B.C.

As justly observed by Dr. Yellowlees of Glasgow University, the subject of mental disease is being regarded with an interest and intelligence very different from the superstition and prejudice entertained by the public twenty years ago. We have satisfactorily shaken off the possession-by-the-devil theory, but while the intelligent public are grasping a more rational conception, is it not a fact that there are yet some of us slow to recognize that insanity is the product of a pathological process, a process that is not infrequently determinable and occasionally amenable to treatment, and one that in all cases should be made the subject of direct investigation? Sufficent evidence is at hand to warrant us in stating that every form of mental derangement is dependent upon "physical or chemical changes in the structural elements of the nervous system and the operation of pathological processes which may be seen at work in other parts of the body."

As an accurate pathology is the basis of scientific therapeusis in other departments of medicine, the same should obtain in this, and each case presenting symptoms of mental aberration be investigated with the definite care with which we would exercise in determining the cause of a severe abdominal pain. Too often these cases are hurried to the cells, given a hasty examination (?) and committed to the asylum there to be one of hundreds, to improve or grow worse, to live or die as the case may be

Upon the general practitioner the modern conception of insanity lays new responsibilities, for it is he who first has the care of such cases. It is his province where such an unfortunate is presented to him to consider the patient one suffering from physical disease, and to proceed as with cases presenting no mental symptoms, and endeavor to determine the the nature and location of the lesion, and when determined to resort to such measures as he might consider necessary, and not as has too often been the case to consider all cases beyond the jurisdiction of practical medicine the moment mental abnormality (acute sepris excluded) appears. In many cases the cause may elude his skill, and the patient require the restraint of asylum life, but in other cases the cause may be clouded in less obscurity than he had hitherto thought, and in a small proportion of cases may be comparitively easily determined.

Although we cannot yet state that a given local pelvic disease in an insane patient is the cause of the mental symtoms, we have grave suspicions of it being causative, for we have the highest authority for the statement that the sexual organs lie more closely related than any other organs of the body, and the nearer a given pathological condition lies to the sympathetic centres the greater the probability of such condition affecting the nervous health, and of being one of the possible causes for we must not forget that insanity is frequently the result of a multiple focus.

While the purpose of this paper is to direct attention more especially to disease of the female pelvic organs as a cause of insanity, it is not

supposed that other causes are to be overlooked e. g. syphilis. Anyone acquainted with recent medical literature knows what light has recently been thrown in this direction, and more yet remains to be demonstrated of the direct effect of this disease upon the circulatory and nervous systems. Artificial and oppressive conditions of life, so well described by Dr. Russell of Hamilton Asylum, self abuse, prepercial adhesions in both sexes, varicocele, undescended testicles may all be factors while gonorrhea has much to answer for. These few conditions mentioned and many others come directly within the scope of the family physician, and to him we look for treatment.

It is unjust to the patient and cruel to the friends to rush a patient into an asylum without giving an opportunity for rational treatment and hope of recovery. It is no greater disgrace to a family for one member to be insane than for one to suffer from typhoid or myopia, but the public think otherwise, and it will only be the more rational treatment of the insane by the general practitioner that will give the public any different conception.

Possibly the department in which the general practitioner can obtain his best results is that of gynaecology. It is not expected of him that he posses the *tatus raditus* of the specialist, but we do presume that he is able to diagnose and treat the most frequent lesions, and in cases presenting greater obscurity or difficulty that he be sufficiently sincere to engage the co-operation of others of greater experience. If systematic examination were made in every case presenting indications of mental abnormality, and appropriate treatment given, treatment that we would accord to the same condition in the sane, our asylum commitments would appreciably diminish.

As an indication of the possibilities in this department I may be excused for giving the result of examination of cases that have come under my observation since January 1898, who had recently been or who were insane at time of examination :

Cases examined, sixty. Of these fifty-seven had been or were at time of examination in various asylums. Abnormal condition of pelvic organs were found in fifty-six.

The most frequent conditions found are salprugitic adhesions, cystic and cirrhotic ovarus, retroversion with adhesions and lucerations. Only two febroids and no large ovarian cysts. Fungoid endomitorety and varicocile were frequent in those operated upon.

As to results, it being but fifteen months since the first operation was performed, it is too early to speak, but up to the present the result is: Cured, four; improved, six ; unimproved, one ; made worse, none; died seven week after operation, from minigitis, one ; died, resulting from sepists cerebractical operation, one ; too early to report, being operations performed within four weeks of writing, eight.

These figures speak for themselves and are an indication of what unconquered fields lie in the path of the general practitioner, ever remembering that more than ever we now realize the truth of the old proverb, *mens sana in corpore sano.*

THE TREATMENT OF DISEASES OF PIGMENTATION.

BY JOHN V. SHOEMAKER, M.D., LL.D., PHILADELPHIA.

Read before the Section on Cutaneous Medicine and Surgery at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

A clear complexion is one of the elements of personal comeliness. A very large proportion of people who seek the dermatologist do so on account of some more or less pronounced defect in the normal and healthy coloring of the skin, especially of the exposed parts. It is needless to say that most of these patients are women. Women are naturally more annoyed and mortified by such blemishes than men. Pigmentary diseases of the skin range from the most trivial to the most serious ailment. Some involve but a slight departure from the normal, others cause extremely dark and unsightly lesions. In most cases the pigmentation is increased or modified in hue, but in a certain number it is diminished. Most diseases in which the pigment of the skin is affected depend upon some more or less grave constitutional cause. A few are merely local disorders.

Lentigo.—This is one of the most common and most insignificant of cutaneous affections. It is purely a local disorder, due to exposure to the heat of the sun and winds of spring and autumn. It is, however, a source of annoyance out of all proportion to its triviality, since it particularly attacks fair and beautiful skins. Freckles consist simply of accumulated masses of normal pigment in the mucous layer of the epiderm. Therefore, it is only necessary to remove this layer in order to cure the disease. The affected parts of the pigment layer may be destroyed by the application of any slightly caustic agent. Among those often used for this purpose are salicylic acid and corrosive sublimate. Touching each spot with strong carbolic acid is a good plan, although a better remedy is copper oleate in the strength of five to sixty grains to the ounce of excipient. The most efficient method of treating these spots is by electricity, used either in the form of electrolysis, inserting the needle superficially over the freckle, or by the frequent application of galvanism.

Chloasma.—Chloasma may be defined as a freckle on a large scale, but, unlike lentigo, it often depends upon the presence of some constitutional disorder. Chloasma uterinum is mentioned in all the text-books, and the chloasma of pregnancy sometimes discolors almost the entire body. As regards its external causes, any agency which keeps up a habitual congestion of the skin may give rise to chloasma.

As the discoloration of chloasma resides in the same layer as that of freckles, its local management is exactly the same as in that disease. It is necessary to avoid agents like mustard and cantharides, which themselves are capable of determining pigmentation. The frequent application of the galvanic current is the most efficient means at our disposal for removal of the pigment. External treatment alone will not suffice if the cause is internal. We must address our medication to the constitutional disorder which has produced the chloasma. In many cases we must

resort to gynecologic measures. In the chloasma of pregnancy we can make use only of local treatment and those tonic, lavative or diuretic remedies which may be indicated by the general condition of the patient.

Tinea versicolor.—Tinea versicolor or chromophytosis is the disease which in gross appearance most nearly resembles chloasma. Unlike the latter, it generally spares the face, although it may appear upon the neck and breast. The characteristic lesion of tinea is of a fawn color, very slightly raised above the surrounding surface, and covered with branny scales. The discoloration may be brown or nearly black. The patches of chloasma are not raised and do not scale. Chloasma is not uncommon upon the face. The parasite of tinea may be found by microscopic examination of the scales. The parasite inhabits the horny layer of the epiderm.

The treatment consists in exterminating the microsporon fufrur. This object can not be readily accomplished as long as water is freely used upon the parts, as that fluid contributes to the nourishment of the parasite. Parasiticidal agents used in this disease are the mercurial preparations, chrysarobin, sulphurous acid, iodin, turpentin, resorcin, carbolic acid, etc. My favorite remedy in this affection is a 10 to 20 per cent. copper oleate ointment, which insinuates itself between the epidermic cells and destroys the parasite. It is not necessary to use a large quantity. Barely enough should be employed to penetrate the surface, and more than this being a superfluity.

Jaundice.—The discoloration due to absorption of bile pigment varies from light yellow to brown. Its nature should be easily recognized from the stain of the conjunctivæ, the discoloration of the urine and its reaction to the bile test, as well as by the accompanying general symptoms. In infants it occurs in consequence of the alterations in the circulation taking place at birth. In some instances it is pyemic, and is caused by umbilic phlebitis. As jaundice depends upon so many pathologic conditions which belong to general medicine or surgery, the attempt to discuss its treatment would stretch this paper to an inordinate length.

Chlorosis.—In this disease the skin assumes a peculiar greenish-yellow hue, owing to the loss of hemoglobin. The red corpuscles themselves are slightly, if at all, diminished in number, but the loss of hemoglobin is out of all proportion. This fact of pathology furnishes the key to the treatment. It is imperative that the blood be supplied with iron. In recent years a number of organic combinations of iron have been added to our armamentarium and have the advantage of being more thoroughly absorbed and better tolerated by the stomach. The diet must be nutritious, perhaps concentrated or predigested, the patient must have fresh air, sunshine, and, if possible, light exercise in the open air.

Morphea.—In the early stages of morphea the affected surface is of a pink or violet hue. At a later period the color fades and the surface has the aspect of ivory, wax, alabaster or marble, or, as it has otherwise been expressed, the part looks as if a piecc of lard or bacon had been imbedded in the skin. The disease is apt to appear in prominent

situations, as upon the face, neck or arms. Fortunately, it is rare. We are in ignorance of the cause of morphea, although it often seems to be dependent upon disturbances of the nervous system. Treatment must be conducted upon general principles. Hygienic measures and constitutional tonics are of service. The best local methods are massage and galvanism. Morphea is essentially chronic and obstinate. If the lesions undergo atrophy, no treatment is of avail.

Scleroderma.—Scleroderma, another rare affection, may occur on any part of the body, but it is more frequent upon the upper extremities. The skin becomes hard, pale and cold in lines or patches, and has been compared to that of a frozen corpse. It becomes firmly bound down to the subcutaneous tissue. When the face is attacked the features are motionless and expressionless. This aspect has been termed the "sclerodermic mask." In extreme cases the skin atrophies, the patient has a hidebound feeling and motion is difficult. Pigmentation may accompany the atrophy. Scleroderma resembles morphea in many respects, but the diseases are distinct. Both are oftenest seen in women. In both the etiology is obscure.

The treatment of scleroderma is not very satisfactory. Hygienic care, tonics and alteratives are of service by promoting the general health. Free diaphoresis, by the use of pilocarpin, is likely to accomplish some good by its action upon the sweat-glands. It is customary to make use of stimulating ointments, especially those containing mercury or iodin, upon the parts. The most promising treatment, however, is by means of baths, massage and electricity. The baths should be warm, frequent and prolonged. Galvanism, static electricity, and electrolysis have been employed with benefit by different authors.

Malaria.—Chronic malaria communicates a pale yellowish tinge to the skin. In hot climates the toxemia may so profoundly impress the liver as to produce actual jaundice. Diffuse patches of discoloration may also be caused by malaria. These may resemble or, indeed, may be identic with the patches of chloasma. Pigmentation due to malaria can only be removed by curing its cause. Among drugs, quinin, arsenic, and iron are of the most value. The most radical treatment is change of climate; if possible, removal to a district free from malaria.

Amyloid degeneration.—This disease gives a peculiar waxy appearance to the surface. As it is the result of serious organic processes which require their own appropriate management, and as it is an ultimate degenerative process, I need not enter upon the consideration of such a vast subject, chiefly of pathologic interest.

Exophthalmic goiter.—Exophthalmic goiter is generally attended by the pallor of anemia, but in some instances brownish or almost black patches develop upon the body. In other cases spots of vitiligo have made their appearance during the course of this disease. Disordered pigmentation is the least important manifestation of Graves' disease. The general objects of treatment must be to tranquillize the action of the heart, allay the morbid excitement of the nervous system, and correct, as far as

possible, the existing anemia. Vascular and nervous sedatives with ferruginous tonics will best accomplish these objects. Hygienic regulation is of the utmost importance.

Addison's disease.—The bronzing of Addison's disease is characteristic, and is very common upon the face and neck. The discoloration varies from amber to dark brown. Exceptionally, spots of vitiligo coexist with the general bronzing of the integument. The pathology of the malady is not yet entirely clear. The suprarenal capsules seem, in most cases, to be at fault, though it would appear that they are secondarily and not primarily affected. As the lesions are often of a tuberculous or carcinomatous character, it is obvious that the treatment can not, at the present time, be of much promise. Certain cases have notably improved under the use of extract of the suprarenal glands. In some of these cases constitutional amendment occurred without any reduction of the pigmentation. I should certainly, however, advise that this new method be given a fair trial in any case of Addison's disease. Of the more usual means of treatment, electricity has yielded better results than have followed the exhibition of drugs.

Leprosy.—Increase or decrease of pigmentation is one of the features of leprosy and possesses diagnostic importance. When fully developed, the disease should be promptly recognized. In its beginning stage, and particularly in a country where it is not often seen, it may for a time escape recognition. An early diagnosis is extremely desirable in order that an individual may not become a possible source of danger to the community in which he dwells. Of the treatment of leprosy I can, unfortunately, say little. The reports concerning Carasquilla's serum treatment do not seem to lend us much encouragement, but I am not without hope that some analogous procedure will eventually be discovered capable of affecting the progress of this terrible malady.

Syphilis.—With the copper-colored eruptions of syphilis we all are familiar, but what has been called the "pigmentary syphilide" is not so universally known. The discoloration varies from gray to brown, and is sometimes so faint that it is only perceived by reflected light. These exceptional pigmented spots of syphilis are prone to appear upon the face and neck. Sometimes the contrast of white and discolored skin produces a dappled or reticulated aspect. I do not propose to occupy your time with any discussion as regards the treatment of syphilis. Suffice it to say that I believe in the wisdom of beginning treatment the moment that the nature of the disease is recognized—whether in the primary or secondary stage. I believe in a protracted and systematic course of mercury with certain stated intervals during which the remedy is suspended. I am of the opinion, furthermore, that there are times when it is advantageous to substitute iron and other tonics for the mercurial, or, at least, to employ them in combination.

Carcinoma.—The peculiar sallow and cadaverous color which is often present in cancer is so well known that we are in the habit of attributing to it a degree of diagnostic significance.

Melanosis.—In both carcinoma and sarcoma a very malignant form is recognized under the title of melanosis, marked by the deposit of dark-brown or blackish pigment, or melanin. Melanotic carcinoma and melanotic sarcoma appear by preference in the eye and upon the skin. Unfortunately, little of encouragement can be given concerning the treatment of melanosis.

Nervus pigmentosus.—Nervus pigmentosus is very apt to appear upon the face and neck. It is, particularly when large and hairy, a sad disfigurement to a beautiful face. I recall the case of a lovely and handsome brunette upon whose chin quite a large hairy mole had been allowed to remain, and which certainly detracted from her otherwise remarkably attractive face. Nevus pigmentosus should be removed, either by excision, ligature, caustic or galvanocautery.

Xanthoma.—Xanthoma, known also as xanthelasma and vitiligoidea, appears as a slightly elevated spot of a yellow color which has been compared to that of chamois leather. Its commonest location is upon the upper eyelid, though it occurs upon other parts of the face. It is often associated with jaundice and sometimes with diabetes and gout. It is generally necessary to remove the growths by caustics, curette or knife. Care must be taken to prevent ectropion. Electrolysis is an effective method of removal. Accompanying diseases will demand their own treatment.

Xeroderma pigmentosum.—The spots of this disease at first appear as freckles, and are apt to occur upon the face and neck. They are yellowish, brownish, or blackish in color. After having been in existence for about a year they undergo atrophy, and the skin becomes as thin as parchment. Old cases cause much disfigurement. The disease generally begins in early childhood. It is peculiar in exhibiting a tendency to malignant change from the tenth to the twentieth year of life. Xeroderma pigmentosum is a very rare affection. The treatment consists in removal of the growths.

Morbus ceruleus.—From some malformation of the heart or great vessels, the blood may be habitually overladen with carbonic acid and deficient in oxygen. In correspondence with the gravity, all that we can do is to study the comfort of the patient and make use of stimulants during paroxysms of dyspnea.

Argyria.—The grayish or bluish discoloration caused by a deposit of silver in the skin is well known, although much less common than before the introduction of the bromids, when the silver salts were the main reliance in the treatment of epilepsy. Potassium iodid is generally recommended for the purpose of removing the stain, but the attempt is not attended with much success

Arsenic pigmentation.—The long-continued ingestion of arsenic will sometimes give rise to localized or diffuse pigmentation.

Albinismus.—In some individuals there is a partial or total lack of normal pigment. Curiously enough, this abnormality is most common in those belonging to the negro race, in whom pigment is most abundant.

Vitiligo is acquired albinism or leucoderma. Like albinism, it is most common among negroes and dark complected whites. Patches of vitiligo are usually outlined by a dark border. This border may be removed by the use of galvanism, and the patch will then be somewhat less noticeable. Irritants, such as croton-oil, oil of turpentin, tincture of cantharides, tincture of capsicum, etc., have been applied to the whitened surface with the hope of exciting a fresh deposit of pigment.

Leukemia and pseudoleukemia.—In leukemia the skin has a peculiar and characteristic light yellow color. In pseudoleukemia or Hodgkin's disease there is habitual pallor, and when the abdominal glands are largely hypertrophied, there is also sometimes bronzing of the surface. These affections depend upon such deep-seated causes, and have such a fatal course, that treatment is essentially futile.

Striæ atrophicæ.—Atrophic lines or spots are usually the result of continued distention of the skin, as, e.g., from pregnancy. Sometimes they are of neurotic origin. They are practically incurable.

There are three agencies which are to be placed above the action of drugs or of surgical procedures in the treatment of pigmentary diseases of the skin. These are baths, massage and electricity.

Vapor baths are of value in removing pigmentary deposits, as in chloasma or in those conditions which are the results of long-continued local irritation. Various medicinal substances are used to enhance the efficacy of the liquid or the vapor, as mercury, balsam of Peru, sulphur, iodin, bromin, etc. Mercury and iodin are particularly valuable when syphilis has any influence in the production of the local condition. Both water and vapor baths are useful in removing pigmentation, when impregnated with bromin or iodin in proper proportions. The influence of immersion or contact with moist vapor is to tranquillize the peripheral nerve-fibers and the capillary circulation and to stimulate the absorbent vessels.

Massage.—In the affections named, massage is very beneficial and particularly when practiced directly after the patient has taken a bath. Massage has an excellent influence upon the skin. It increases the volume and rapidity of the cutaneous circulation, and stimulates the secretory and respiratory functions of the integument. Its favorable action upon the periphery is transmitted to the central nervous system, and therefore, all the conditions of nutrition, local and general, are improved.

Coincident with these effects the absorbent system is stimulated, and thus abnormal pigmentation is often removed. Massage is also serviceable in the reverse condition, viz., a deficiency of coloring matter, as in vitiligo, where the enhanced nutrition of the mucous layer of the integument results in a more healthy deposit and distribution of the pigment. The combination of baths and massage has produced good results in scleroderma, both as regards the rigidity of the skin and its abnormal coloration.

Electricty.—Of all the means at our disposal the use of electricity is the most powerful in restoring normal nutritive conditions to the skin.

This object is accomplished by its action upon the capillary circulation and the terminal fibers of the trophic and vasomotor nerves, its quickening influence upon the lymphatic vessels, and its effects upon the cutaneous glands. In severe cases of pigmentation it is my custom to combine the three beneficial agencies which I have mentioned. I employ at different times and in different conditions static electricity, galvanism and faradism. It is often of most service to alternate the galvanic and faratic currents, thus obtaining the most potent effects of the electric force.

In freckles and chloasma the application of the electric current in the manner indicated is followed by marked improvement. In chloasma it is equally necessary to give attention at the same time to any visceral disorders which may exist. The electricity acts both as a local and systemic tonic. In connection with, or in consequence of, its tonic effect, the electric current has an excellent alternative action, and this extends to the pigmentary as well as to the other functions of the skin.

There is a large class of persons who object strongly to every operative procedure involving the use of the knife. To these the application of the galvanocautery is far less alarming, and many will consent to its use in cases of nevus pigmentosus, who will not permit excision. The method is certainly effective.

In conclusion, I can expess my gratification at the results which for many years past I have been able to obtain by the systematic employment of electricity in all cases of pigmentary disturbances not dependent upon lesions so grave and deeply seated that they are, from their nature, not amenable to any form or method of treatment.

The Effects of Anterior Poliomyelitis on the Brain.—Probst (*Wiener klin. Wochenschrift*, 1898, No. 30) adds another to the somewhat limited number of examinations on this subject. A man, aged 68, had acute anterior poliomyelitis at 4. There was atrophy of the left arm and right leg. The brain showed atrophy of the central convolutions on both sides, more marked in the upper part on the right side. The left angular and marginal gyri were also less prominent than usual. Microscopically the cortex in these parts showed normal thickness, but all the cells were small, perhaps diminished in number, but well formed. The medullary rays were thin, the neuroglia of the outer cortical layer increased. In the internal capsules the fibres in the pyramidal tract were abnormally thin, but without signs of degeneration, and the further course of the pyramidal tract was atrophied. Cerebellum, pons, and corpora quadrigemina were small, the olivary bodies small but of the same size. Microscopically the cerebellum showed no alteration. The cord showed atrophy of the lateral pyramidal tracts, especially in the lumbar portion, with the usual alterations of an old poliomyelitis. Probst draws the conclusion that the formed but still developing brain is affected by the disappearance of the peripheral neuron, though not to as great an extent after poliomyelitis as after amputation; and that the cerebellum is affected by infantile spinal paralysis through paths as yet unknown.

TORONTO CLINICAL SOCIETY.

The regular meeting of the Toronto Clinical Society was held in St. George's Hall, Elm St., on Wednesday evening, March 8th, at 8.30 p.m., the president, Dr. F. L.M. Grassett, in the chair.

The following Fellows were present during the evening :—Peters, Fenton, Primrose, Meyers, Badgerow, W. H. B. Aikens, McCallum, Parsons, Wm. Oldright, McIlwraith, Bruce, Trow, H. J. Hamilton, Thistle, Rudolf, E. G. King, Ryerson, Dwyer, Pepler, Bingham, Chambers, A. A. McDonald, Cameron, Nevitt, Geo Elliott.

Nominations for memberships, Dr. Clarence Starr proposed by Dr. Bruce, and seconded by Dr. Primrose.

UNUNITED FRACTURE OF RADIUS AND ULNA.

Dr. George A. Peters presented the patient and describing the accident and present condition of the forearm. Patient is a young man twenty-five years old, was injured on the 29th day of December, 1898 in a thrashing machine. His right hand was caught under a pulley and wound round the shaft in such a manner that the arm was bent backwards over the back of the shaft. The result was that the ends of the bones were driven into the muscles and fascial. It was properly set at the time on anterior and posterior splints; but the bandages got displaced either by the patient himself or the carelessness of his friends. There is a compound injury of both radius and ulna, below the junction of the middle with the lower third of the bones; but no communication. Now there is movement of both fragments, although there was a good deal of callus thrown out and a fair attempt made at union. The radius is separated from the upper fragment of the ulna by a considerable interval laterally. The fracture is oblique and the hand is carried somewhat to the radial side, with some shortening. The lower end of the upper fragment can be felt far forward among the muscles, it probably having gone in among the muscles and separated them and the tendons. One can place one's finger almost between the two fragments and sink it down to a considerable extent. There is no contact in any part at all. The upper end of the lower fragment of the radius feels sharpened and one detects with the finger that it is an oblique fracture. There is now pretty full power of extension of the fingers. Thumb movements are pretty good though flexion is impaired. Circulation is unimpaired except so far as it is always impaired after such an injury. There is a certain degree of cyanosis and tarpidity in the hand. The nerves are unaffected except that the little finger is slightly benumbed. Dr. Peters expressed his intention of doing an open operation dissecting out the bone in front with the periosteum and bringing the bones together. He condemned using any any such thing as the bone ferule introduced by Senn thinking it most unsurgical, and stating he would not wire in this case. The president Dr. Grasett concurred with Dr. Peters in his manner of operating.

Drs. Oldright and E. E. King discussed the case, the latter giving a short concise description of the skiagraph he had taken that day. It showed the radius and ulna were fractured about on the same level, that the radius is overlapping to the extent of ¾ of an inch antera-posteriorly and that the obliquity of the fractures is very slight.

SPLENIC ANAEMIA.—Dr. W. B. Thistle.—The patient presented was a girl nine and a half years of age, having been admitted to the Victoria Hospital for Sick Children October 15th, 1898. The mother and father are both living and fairly healthy; four other children also healthy. Four years previously the child had measles with recovery. She has never been sick since except an occasional headache, until about a year ago when it was noticed she was of a peculiar colour, and had occasional headaches. About a month prior to her admission to the hospital, she had vomiting and headaches with legs slightly swollen. On examination, it was noticed she was of a peculiar pallor. a yellowish olive tint. Auscultation of heart revealed systolic murmur, and cardiac dullness was found to be increased. The liver showed no enlargemant, but the spleen was decidedly enlarged extending below the umbilicus almost down to the pelvic crest There was no change in any other organ. The lymphatic system was not enlarged in any part. There was no enlarge- of the thyroid or the axillary glands or the glans in the groin. The patient had occasional diarrhœal attacks. Examination of the blood on 10th October, gave red blood corpuscles 2,347,000; whites, 13,511. Examination of urine gave sp. gr. 1035; no albumen; no sugar; no bile, although there was decided jaundice affecting the skin. The spleen has gradually got smaller until it is now decidedly smaller than it was three months ago. At the present time the blood count shows—reds, 3,000,000; whites, 20,000,000. Persistence of the analinia ir more prominent at some times than others. Dr. Thistle stated he had arrived at his diagnosis by excluding leukaemia, Hodgkin's disease and pernicious ana mia. He exhibited charts showing the very decided decrease in size of the spleen since the admission of the patient to the Sick Children's Hospital. The treatment consisted in the administration of intestinal antiseptics, large doses of bismuth and small doses of salal combined and the exhibition also of arsenic with tr chloride of iron. Bone marrow had been tried but did not agree with the patient. There was elevation of temperature constantly so that it has been up and down above 99°, instead of following the normal line.

Drs. Fenton, Rudolf and Parsons discussed the case.

ABDOMINAL TUMOR.—R. J. Dwyer. Dr. Dwyer read notes of his case, after which the patient was laid on the table and examined by the Fellows. The patient is a woman aged thirty-five years, married born in Canada Father died at eighty-five years; mother at fifty-eight—"dropsy." Brothers and sisters living, strong and healthy. Children, eight, two still-born. Patient has had the general complaints of childhood Menstruation has always been regular. There has been no stomach trouble at any time previous to the present illness. She is not robust,

but has worked hard up to the present time. The first indication of her present trouble appeared last September. There were pains in the stomach, passing downwards towards the pelvis. These gradually increased in severity until November when vomiting commenced. They were relieved by a drink of water. The pains also caused the patient to feel hungry; whilst often there was a feeling of vomiting without any vomiting being present. By Christmas time, the patient was unable to keep anything on her stomach. Occasionally a light meal will stay down for half a day. A test breakfast was rejected at once. In the vomited matter there was an abundance of mucus, a considerable quantity of lactic acid but no Hcl. The patient presents the appearance of one weak and wasted. There is a marked fullness in the epigastric region. Notwithstanding her emaciated appearance she has not the cachectic look one would expect in cancer and her age is against it.

Dr. Grasett in discussing the case did not think the age excluded malignancy though it occurred most often in advanced life.

Dr. Nevitt said it appeared to be a cancerous growth in the wall of the stomach. Its nodular appearance, its close proximity to the abdominal wall and the escape of gas on pressure, all seem to point to the location in the wall of the stomach.

Replying, Dr. Dwyer enlarged upon his notes. He pointed out too distinct points at which gurgling could be obtained. There was no dilatation of the stomach present. When the patient takes a full breath you get dullness at the upper border of the growth and above that you get the stomach resonance. There are one or two nodules present. Dr. Dwyer thinks it probable that she had an ulcer of the stomach and peritonites; or a tubercular peritonites. The appearance of the tumor would suggest to him a thickened omentum and possibly transverse colon beneath. As regards the age of the patient bearing on cancer, there have been twenty-six cases of cancer of the stomach in St. Michael's hospital and only one occurred under fifty years of age.

RHINOLITH WITH NOTES.—Dr. Chas. Trow showed this specimen removed from a girl nineteen years old. There was at first a considerable discharge from the left nostril with some slight pain increased on pressure externally; and headache. On examination of the nose found middle turbinated thicking and the rhinolith exhibited which had to be broken up in removal. The part after removal was cleaned with Seiler's solution and iodal insufflated. The swelling on the outer part of the nose gradually disappeared. These nasal calculi are supposed to be formed by some foreign body becoming impacted in the nostril. As a rule they are met with singly in adults and are generally of an irregular ovoid form, in size varying from that of a millet seed to an almond kernel, and weighing up as high as two ounces. There was also much lachrymation before the operation and a high temperature afterwards.

DUCT CARCINOMA OF THE BREAST.—Dr. H. A. Bruce showed this specimen, the section having been taken through the nipple. His notes of the case are as follows: Patient sixty-one years old. None of her

relatives were known to have cancer. The affection of the breast was first noticed a year ago. There was dull aching pain in the left nipple on retiring one night. After that she never suffered from pain again. Then a small lump beneath the nipple was noticed, which gradually increased in size. The breast gave sensation of weight but no pain present. The nipple was slightly retracted, and the skin immediately surrounding the nipple was adherent to the mass beneath. The growth measured four inches in diameter and surrounds the nipple equally in all directions. High up in the axilla, three enlarged glands could easily be felt. The operation was performed with solution of cocaine, (P. D. & Co's tablets, morphine gr. $\frac{1}{4}$, cocaine gr. 1 and common salt) and the entire breast was removed, a drainage tube being placed in the axillary end of the incisior. Duct cancer is an exceedingly rare form of the disease. The nipple is usually not retracted but in this case it was to a slight degree. The disease commences as a malignant papilloma. Into the ducts simple bacillary growths project. These increase and cause discharge from the nipple. The bacillary projections are composed of epithelium.

MALIGNANT DISEASE OF BREAST.—Dr. George A. Bingham exhibited two gross specimens removed from patients aged forty-five and thirty-two years respectively. In the first case there was absolutely no pain whatever and no retraction of the nipple. A nodular mass was felt below the nipple line with enlarged glands in the corresponding axillary. The growth was of five months duration. In the second case the period of growth was six months. There was a considerable amount of pain and much trouble from the beginning In case No. 1 the growth was found to be firmly adherent to the pectoralis major, therefore, in operating, Dr. Bingham removed the lower part of this muscle and also had the glands of the exilla thoroughly cleaned out on account of their being very much involved. He did not touch the pectoralis minor. In No. 2 the same operation was performed. The point he would like to hear discussed was the advisability of removing the pectoral muscles. He was entirely prepared to say that we should remove the pectoralis major in all cases in which an operation was done. In all cases where we have malignant disease of the breast we may have affection of the axillary spaces without any evidence of adhesion. An interesting feature to note was that under the microscope, the pathologist failed entirely to discover any trace of malignant disease in one case. Another point in reference to the method of removal which he thought of some interest, one should attempt to remove as far as possible the muscular layer and the growth in one mass without separation and as far as possible without cutting into the diseased tissue at any point.

Drs. Pepler, Primrose and Wm. Oldright discussed the case.

GEORGE ELLIOTT,

Rec. Sec'y

CORPULENCE AND THE FATTY HEART, WITH CASES.

BY THOMAS E. SATTERTHWAITE, M.D.
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Corpulence and the fatty heart are so closely related that a consideration of one involves the other, Chambers found that in thirty-six corpulent people twelve had fatty hearts, while Quain's observations were that patients with fatty hearts were invariably corpulent. We may therefore infer that corpulence disposes to fatty heart. Probably the one is essential to the other. The term fatty heart means merely that the heart is burdened by an excessive deposit of fat, not that it has undergone fatty degeneration. The fatty heart is said to be in a condition of infiltration, pathologically speaking. Fatty degeneration of the heart is a more dangerous affection, but it may be a sequel to fatty infiltration. If they co-exist, which sometimes happens, the prognosis is vastly worse.

Corpulence or obesity consists in an excessive deposit of adipose tissue in parts of the body that in health are comparatively free from fat. It is caused essentially by nutritive disturbances; or to put it in another way, it is the result of a loss of equilibrium between assimilation and dissimilation.

Obesity is a serious matter in many ways. First of all, it is a posiive discomfort to the patient. for locomotion is made difficult, digestion is disturbed, and the faculties are often dulled. Obese people, too, have a constant tendency to constitutional disorders, such as gout, rheumatism and diabetes. There is also the everpresent danger of some serious illness, accident or surgical operation, which they may not be able to survive, as corpulent people are deficient in vital power. Fat infants and children seldom, in my experience, reach adult life, while in advancing years the obese may be totally unable to go about. Miles Darden, whose height was seven feet six inches, and weighed over a thousand pounds, had to be transported in a wagon during the last four years of his life. And corpulence may be a disturbing factor in social life. It is said that in Albania, corpulence in the male, may be a proper ground for divorce.

Excessive weight has been treated successfully from very early times, the Greeks employing trained men to reduce their athletes, but corpulence as a disease was not plainly shown until the present century, when English physicians such as Wadd (in 1825), F. Harvey (in 1864), Chambers (in 1850), and Quain (in 1880-1885), wrote up the subject Harvey was the physician of Banting, and his method, known as the Banting-system, became widely known and was extensively practiced.

Adipose tissue is chiefly stored in the subcutaneous connective tissue, beneath the serous membrances, or in the intermuscular septa. The largest deposits are beaneath the skin of the abdomen, in the mesentery, on the buttocks and thighs, and in the back of the neck. In women the excess of fat is usually in the thighs and buttocks. A certain amount of fat is normally contained in the connective tissue corpuscles, in the form

of minute specks. According to Michael Foster, these specks coalesce into droblets, these again into drops, until, as the protoplasm of the corpuscles diminishes and the oil globules unite, the original connective tissue corpuscle is converted into a fat cell. The remnant of the protoplasm is then gathered about the nuscleus. To a moderate extent, fat tissue is natural, as it is a normal constituent of the system. And within physiological lines ordinary fat tissue may be increased so as to subserve a useful purpose, constituting a reserve store upon which the body may draw for nutriment in periods of prolonged vital strain.

But obesity has a progressive tendency, for as the bodily weight increases, and with it the dyspnoea and palpitation which necessarily follow exertion, there is a further hindrance to the oxidation of the blood, which is still more increased when the heart becomes involved in the fatty deposit. Corpulence also begets plethora, and it in turn hemorrhoids, varicose veins, haemorrhages vertigo, headache, disturbance of sight and hearing, dulness of the intellect and dyspepsia, all of which may be attributable to passive congestions. But it must not be supposed that all corpulent people are so affected. Sam Johnson, the author of Rasselas, and David Hume, the historian, were corpulent, but led, for the most part, intensely active intellectual lives, notwithstanding this malady. Obesity may occur at all ages. I have seen it in infants under one year. On a number of occasions I have ascribed it to a surfeit from artificial feeding with food containing too much cream, or a superabundance of starchy material. In two instances (see Cases 1 and 2) the deficient oxidation of the tissues is shown by diminution in the normal percentage of urea, as shown in the urine, and as well as by the actual diminution of the urea. Both of these patients were lithaemic, as the diminution in the excretions of urea would indicate. Lack of exercise, too much sleep and a secluded life also tend to corpulence. The obesity of some women of the East is explained by Charles Robin, on the ground that they take little exercise, eat all day long and sleep a great deal. Obesity is also hereditary. White races that live in a low, cool and moist climate are specially prone to it. Drinking any liquor to excess also excites to corpulence. Fermented liquors and the alcoholics are special causes But overeating will do it. Most persons eat more than is good for them. Persons who drink water in excessive quantities are usually corpulent, especially if they drink much at their meals, perhaps because the increased amount of water interferes with digestion and assimilation. Besides if the gastric juice is diluted, the blood is made more liquid and the red corpuscles may be dissolved, in a measure.

Fat tissue appears to be formed chiefly from the carbo-hydrates; also from the surplus carbon of the proteids or albuminoids; and from pure fat taken as food, and from water or other liquids. Some authors hold that fat taken as food does not make fat tissue. Ebstein, of Gottingen, maintains this view. The truth appears to be that when fat (or albuminoids) in small quantities are eaten, no fat is stored up, but when the fatty food (and albuminoids as well) are increased to a point where the carbon no longer burned, it is retained in the system as fat.

We are not very fully informed as to the condition of the corpulent after death I, myself, never gave the matter much attention, although I have made a good many post-mortems on corpulent people. But after death the tissues of the corpulent are apt to be soft and flacid, and decomposition ensues rapidly. In a case which occurred in my pathological service, in St. Luke's Hospital, where death was sudden in a man only thirty-three years of age, the left ventricle was found hypetrophied; there was oedema of the lungs; the spleen was large and soft; the liver was fatty; while the liver, kidneys and portions of the stomach were congested.

The diagnosis of corpulence is simple, but it is generally admitted that the presence of a fatty heart cannot be positively determined by physical signs. It is a matter of inference, but most agree with Quain, that where the pulse is small and week, the first sound of the heart feeble; and the impulse weak, the heart's area enlarged and the patient corpulent, it may be maintained that the heart is fatty. Henry Kennedy, of Dublin, in opposition to Quain, bases his diagnosis on a large full pulse, not increased in frequency, an enlarged area of heart dullness, possibly a soft systolic murmur over the aorta with the first sound. In my experience a fatty heart is often accompanied by valvular lesions, and I think that my experience will be found borne out by a study of reported cases. Hence it is that Kennedy may have found a full pulse due to valvular lesions in his cases. In this connection, however, I ought to say that during the treatment for fatty heart, previous murmurs will sometimes disappear, a fact also indicating to mind that these particular murmurs have probably been due to a relaxed condition of the heart chambers and not to an organic valvular disease.

Obesity is a disease that can be successfully treated in most cases, if the patient has a fair amount of vitality; and even in the feeble the dangers attendant on a scientific course of treatment are small as compared with the risks of neglecting such treatment. According to Maccary, as quoted by Worthington in his excellent Thèse de Paris (1875), the methods of the ancients comprised venesection, the use of purgatives, exercises, friction, diet and stimulation of the several emunctories of the system. But these methods were probably not applied to the very young, the very old or the feeble. It seems hardly worth while to discuss the topic of venesection. Drugs, however, are still very extensively used. Liquor potassae was recommended by Chambers in 1850. The dose was from one-half drachm to one and one-half drachms. The theory of the action of this drug is that "it increases the vital power of metamorphosis by saponifying in part the fat contained in the blood, enabling it to be burned off as carbonic acid." It is no longer used, Probably no stomach could stand the use of it for any length of time. Its effect, if any, was to prevent digestion. In other words, it was one of the many "starvation cures."

Fowler's solution in five minim doses three times a day has been used. I have known it to be tried, but never with success. It is uncertain in action and may increase the weight.

Fucus vesiculosis, or bladder wrack, a species of seaweed, found in the Atlantic Ocean, was at one time used on account of the iodine and bromine it contains. It was given in a decoction of two to four drachms to the ounce. The taste is very offensive and the stomach is greatly irritated, so that gastric catarrh may be produced. But the kidneys are urged to great activity. Some have simplified this latter method by giving tincture of iodine in doses of two to four drops in a wineglass of lemon juice. But this treatment, it is said, also produces catarrh of the stomach.

Bromide of ammonium in doses of five to thirty grains per day has been recommended. It is unpleasant to the taste and irritating to the system in many ways. In line with this is the treatment by vinegar. It reduces the flesh but produces nervous disturbances. According to Brillat-Savarin (Worthington) it caused the death of a young girl of eighteen, who insisted on taking a wineglassfull every day.

The Banting method was at one time widely employed. Banting had tried the water of Leamington, Cheltenham and Harrogate, had taken plenty of outdoor exercise, of a vigorous kind, had tried Turkish and vapor baths, and liquor potassae as recommended by Chambers, but with no effect. His physician, Dr. F. Harvey, then put him on a regular diet which consisted of four meals a day. He took eleven to fourteen ounces of meat, game poultry or fish (pork and salmon excepted) tea without sugar, rusks and toast in small quantity, any vegetables except potato, four to seven glasses of claret and two or three ounces of fruit. Hot drinks of "grog" at night. But he is said to have been ordered a mysterious black draught on rising, the ingredients of which I have not been able to discover. On this system, kept up for something over a year, he fell from 202 to 156, losing forty-six pounds, or at the rate of three or four per month. The case as described by the patient is somewhat lacking in details from a medical point of view. The loss of weight per month was rather small—and the dietary, especially as to alcoholics, was very liberal to say the least.

The permanganate of potassa in doses of one-fourth to one grain before meals has been recommended by Bartholow. It is said, at any rate to relieve the acute gaseous-dyspepsia of the corpulent

Chambers' system consisted in a diet of two meals a day, active exercises, rubbing and salt baths, alkalies such as liquor potassae in doses of one-half drachm to one and a half drachms, purgatives and even bleeding.

The treatment at the baths of Marienbad, in Austria, Tarasp and Carlsbad, is due to the use of Glauber's salts, which reduce by causing watery discharges, but they are apt to be so violent in their action, owing to the very short time allowed for the treatment given, that they cause debility, palpitation and even chronic diarrhea.

According to Worthington, Trousseau's plan was to allow his patient lean meat, fresh vegetables, and fruit in their seasons, but to forbid him fat meat, butter oil and milk. The amount of bread and milk taken daily was to be diminished to a point as low as the vitality permitted. The

patient was to be weighed every two weeks, and he was expected to lose at the rate of one and one-half to three pounds per week. Exercises in the open air on foot or on horseback were ordered. In addition, he took baths containing five to six ounces of the bicarbonate of soda. The same drug was given internally to the extent of thirty grains per day.

The plan pursued by Ebstein, of Goettingen, is about as follows, the rules being modified somewhat according to the case :

1. Breakfast.—6.30 a.m., in summer and 7.30 in winter; large cup of black tea without milk or sugar. Two ounce white or brown bread. Plenty of butter.

2. Dinner.—2 p.m. Soup; four to six ounces of meat, with fat gravy, plenty of vegetables of all kinds excepting beets, carrots, turnips and potatoes. A little sweet fruit after dinner. Salad or stewed fruit. No sugar. Two or three glasses of light white wine. After dinner, a large cup of black tea. No milk or sugar.

3. Supper.—7 p.m. A cup of tea. One egg, ham fat—in fact any fat meat, sausage, smoked or fresh fish. Two ounces white bread, plenty of butter. Perhaps a little cheese, and a little fresh fruit. This diet to be kept up indefinitely after the cure is over.

Ebstein, as I have already stated, holds to an idea opposed by most, that the eating of fat does not produce fat.

Oertel, of Munich, has a somewhat similar plan, but prescribes a peculiar course of exercises, and sometimes resorts to violent diaphoretics. He restricts the amount of liquids and solids, limits carbohydrates and fats, orders prolonged walks in the summer season, increasing daily the distance and ascending greater and greater heights (Terrain cur.) In the winter he uses injections of the hydrochlorate of pilo-carpia in doses of one-third to one-fourth grains twice a week.

His dietary would be as follows :

Morning—Tea or coffee, four ounces with milk and sugar. Bread, two ounces (roll).

Mid-day—Beef, ten to twelve ounces : an egg. Vegetables, two or three ounces. Farinaceous food, one to five ounces. Fruit, three or four ounces. Salad, two ounces. Austria red wine, three to four ounces.

Afternoon—Coffee, four ounces with milk and sugar.

Evening—One to two soft boiled eggs, five ounces of meat or six ounces of game or fowl; one to two ounces of bread. Salad. Two to ten ounces of wine, Moselle preferred.

Oerfel's plan is to let the patient take daily thirty to forty ounces of water, three-fourths of an ounce to two ounces of fat, five to six ounces of albumen, and two to six ounces of carbohydrates.

Among the newer remedies recommended in this country is phytoline, the activa principle of the phytolacca decandra or pockberry, to be taken in ten drop doses before and after each meal. It is said to reduce without dieting at the rate of five to twenty pounds per month. The action is apparently on the subcutaneous fat, causing its absorption.

Thyroid extract has been extensively used. It is said to stimulate the skin. It produces emaciation, but often is poorly borne by the

stomach. The grape cure is another means of reducing flesh. The patient takes nothing but unfermented grape juice for several weeks. At first, he takes it in excessive quantities, then the amount is gradually reduced to the least amount compatible with vitality. Then it is increased. It is merely a sort of "starvation cure." The teas which are now widely advertised but whose ingredients are not know to the public, are composed chiefly of senna leaves, with a varying quantity of chelonia, couch grass and coriander seed. These teas act by causing the patient to have two or more very watery movements daily.

Dancel, the French surgeon, who wrote a treatise on obesity, in conjunction with Trousseau, used the hydrogogue scammony (the activity of scammony is due to its resin), of which the dose is five to ten grains. It is rarely used in this country for any purpose. At the same time he reduced the food and drink, but allowed the patient no active exercise.

There are many baths in Europe that are resorted to for the cure of corpulence. First in order of repute are the cold Glauber's salts waters of Marienbad, in Austria, and Tarasp in the Engadine. But if the patients are liable to be affected by cardiac difficulty, asthma or diarrhea, the hot Glauber's salt waters of Carlsbad are better, or the hot alkaline-muriatic waters of Ems, or the bicarbonate of soda waters of Vichy in France; or the alkaline-saline of Brides, on the Italian frontier. In mild cases patients are usually sent to take the saline waters of Kissingen or Homburg, But even these latter may prove to be too strong. I have a patient now under my charge, weighing 220 pounds, who lost fifty weight at Kissingen, but his nervous system was so deranged that he told me he felt "as if he would lose his mind."

Any effort to reduce the weight too rapidly, as often done at the continental spas, is apt to be harmful. It is not desirable to lose flesh too rapidiy, nor is it always well to reduce the weight to the standard as shown by our American tables. It is true that professional trainers can do it, but they have little weight to take off, and their subjects are men of exceptional vigor and physique. Corpulent people should not be treated in this way. It is said that De Graefe, in 1820 (Worthington) reduced a butcher from 363 to 150 pounds in nine months, but the man was a pugilist.

The object to be sought in reducing corpulent people is to take off the weight so that they are relieved from disturbances attendant on the malady, and to accomplish it by the means that are least calculated to disturb the equilibrium. There should be nothing disagreeable about such a course; on the contrary, the patient should enjoy it and feel as each week or month passes by that he is gradually returning to his normal state; and that his facilities are getting keener for the rational enjoyments of life. It is best at first to let the patient know that the course is often a long one. It may take several months, exceptionally, even a year or more. Banting's course took over a year, The patient should be mainly restricted as to food that contains sugar, starches and fats, for there can be no question that fat to some extent produces fat.

Oxidation should be increased by resistant exercises daily for an hour, and by baths that stimulate the skin, and so cause an improvement in the circulation. Enough water should be taken to bring the urea up to the normal amount excreted, but no more is necessary. Tea and coffee should be taken in moderation, because they appear to retard oxidation. Acid fruits and drinks should also be taken sparingly, because in excess they produce indigestion. Sometimes all fruit has to be forbidden. In general the small fruits may be taken in discretion in their season. Sometimes the amount of both liquids and solids has to be much reduced. Laxatives should be taken, if necessary, to produce full daily faecal movements, and stomachics if indigestion is acute. But the vitality of the patient should never be reduced. It should constantly increase. A patient under this treatment can be made to lose from four to ten pounds per month.

The following are illustrative cases.

CASE I.—*Corpulence; fatty heart, aortic obstruction murmur, mitral regurgitant murmur; oedema of extremities.*

Physician, 76, weight 357 lbs. Patient had been a corpulent man for many years, and had suffered recently from sub-acute rheumatism, and chronic eczema of the lower extremities. For several months he had been failing. Had constantly increasing dyspnœa and was unable to carry his great weight. He was wearing rubber bandages for his eczema and œdema, was taking arseniate of soda, and Arkansas Lithia Water. Pulse feeble and intermittent, usually absent in the left wrist. Impulse at the apex barely appreciable. Patient taking also tincture of digitalis, in ten minim doses three times day. Respiration after walking 32 to 44, panting and labored. Acute gaseous indigestion. Cannot walk half a block. Face pallid; apex outside nipple; murmer at apex, with first sound, carried round to the left; with first sound also; carried up great vessels. Urine five pints per day; no albumen, according to the last report. Patient was put on the modified Nauheim resistant exercise treatment with baths. At first the exercises were very mild, with lengthy intermissions. The baths at first were warm and salt; temp. 95°; duration five minutes. At the end of the second week they were carbonated and given immediately before bedtime. Digitalis stopped; sulphate of strychnia one-sixtieth of a grain three times a day; arsenic reduced in quantity. Examination of urine (by E. E. Smith, Ph. D.): Specific gravity 1020; trace of nucleo-albumen; urea 1.61 per cent., 8.34 grains to the fluid ounce; a few uric acid crystals; a moderate number of hyaline and a few epithelial casts; sugar absent

February 25th—Pulse 75 to 84. Respiration 20. Patient evidently better. Ordered Carlsbad Salts twice a week. Two meals only, with eight ounces of meat at each meal. Patient had previously accustomed himself to two meals a day. Weight now 350. Strychnia one-thirtieth of a grain three times a day. Arsenic stopped.

March 10th—Urine re-examined (E. E. Smith, Ph. D.). Sp gr. 1020. Indican; trace of albumen; no sugar; urea 1.55 per cent., 7.05 grs. urea to the ounce. Neutral. Mucus and pus, a trace. A few hyaline casts.

March 17th—Girth 60½ inches. Patient walks a little further each day. Temperature of bath 93°; seven to nine minutes.

March 23rd—Pulse has been ranging as follows: Before exercises, 81 to 88; after, 77 to 82; before the bath, 80 to 90; after, 80 to 86. Patient is drinking Londonderry Lithia Water.

April 2nd—Weight 343 lbs. Water five pints. Sp. gr. 1820. No albumen; slight phosphates.

April 20th—Pulse before exercises, 77 to 87; after, 76 to 79; 13 resistant movements daily, total duration 35 minutes. More force used. Takes now Carlsbad Salts, in larger doses, daily, causing two liquid movements. Milk is discontinued; in place of it Bethesda Water is substituted, with a little lemon juice to aid in satisfying thirst.

April 23d—Weight 338 lbs. Greatest girth 50½ inches. Takes no breakfast. In place of it a glass of hot water. Takes Apenta Water at breakfast time, sometimes followed by hot water. After two months' treatment the patient reported of himself as follows: "Two months' treatment shows a loss of nineteen pounds in weight, and a reduction of eight inches* in measure about the waist, with marked increase of strength and a greater freedom in breathing." Patient lost a little over six pounds per month.

May 2nd—Resistant exercises, thirty to thirty-five minutes. Carbonated baths have been gradually increased to full strength, but are now suspended.

May 7th—Has gained three pounds, and lost nothing in girth. Ordered baths again with one-half per cent. carbolic acid.

May 14th—Weight 332½ lbs. Lost six and one-half pounds in seven days. Bath now every other night.

May 26th—Gained two pounds last week. Rubber bandages now removed. Patient walks easily. Ordered to take only one meal per day for one day, and two meals on the alternate day.

June 4th—Weight 327½ lbs. Greatest girth 53½ inches. Patient has lost about three and one-half pounds a month.

June 11th—Patient going to the country, as directed, to take special resistant exercises daily. To take hot or cold water, one or two goblets with orange juice before breakfast. Then to take a hearty breakfast and a light supper. To eat only twelve ounces of meat, fish or fowl daily, avoiding starchy and sugary food. To eat sparingly of small fruits; to avoid fat in every form, including butter, milk and gravy.

In January, 1899, the patient reported that under this treatment his weight had fallen during the summer to 317 lbs—a loss of forty pounds. During all this time he attended daily to his professional routine of business while in the city, and made long trips out of town in consultation cases, where he was obliged from the necessity of the case to walk long distances in going to and from his train. Among the noteworthy features of this case is that, under the treatment, the eczema and oedema of the legs disappeared, not to return, and that he constantly gained strength, being able to do more professional work during the treatment than he had done for a long time previously.

* Should have been ten inches.

CASE II.—*Obesity; fatty heart; temporary diabetes.*

A lady, of about sixty-five, came to me in October, 1898. She weighed 181, was nervous and anæmic. Height 60¾ inches. Skin bathed in prespiration. Color dusky. Pulse 100 to 104. Weak impulse at the apex. Heart enlarged. No organic murmurs. Urine examination (by E. E. Smith, Ph. D.), sp. gr. 1027. Faint trace of sugar by several tests; no albumen. Urea 1.75 per cent., 7.95 grs. to the fluid ounce. A little pus. Few uric acid crystals. Moderately large quantity of hyaline casts.

October 29th—Second examination. Urine 60 oz. Sp. gr. 1018. Alkaline; no albumen. Sugar absent. Urea 2.28 per cent. 10.40 grs. to the fluid ounce. Pus absent. Moderate number of hyaline casts.

November 2nd—Ordered anti-lithæmic diet. Resistant exercises increased in number.

November 14th—Resistant exercises and massage. One-half per cent, carbonic acid bath, at 97°, five minutes. Girth 43 inches. Average pulse before exercises and bath, 90; after, 81.

November 22nd—Weight 178.

November 28th—Weight 177.

December 21st—Weight 171.

Treatment now stopped by an attack of influenza, the patient leaving town subsequently for a few days in the country. From a health resort where she has been in the habit of going, on January 24th, she reported, "the doctors here think me much improved." Loss of weight about five pounds a month.

CASE III.—*Obesity; spinal curvature; anemia; cardiac displacement.*

Miss M. H., 24, Havana, Cuba; a young lady of large build; height, 5 feet 6½ inches; weighing about 163 lbs.; came to me for treatment July 10th, 1898, wearing a spinal brace.

September 1st, 1898—On examination it was found she had, on standing, the usual lateral curve to the right in the dorsal region, with deviation of about one and a half inches from a straight line in the interscapular region, and deviation of one inch to the left in the lumbar region. Apex of heart outside of nipple one inch, and one and one-fourth inches below the extended intermammalary line. Patient given iron and strychnia, and the brace removed.

October 19th—One-half per cent. carbonated baths, given twice a week. Gymnastic exercises daily under direction. Massage and electricity to spinal region.

November 11th—Three-fourths per cent. carbonated baths once a week.

December 2nd—Under this treatment, continued for three months, though the course was interrupted by an attack of influenza, the spinal deformity was in a measure rectified so that the greatest deviation from the normal, on standing, was only three-fourths of an inch in the dorsal region and in the lumbar three-eights of an inch.

January 2nd—Apex three inches from the median line, and one from the intermammary line. The patient was now suddenly summoned to Havana. She lost about fifteen pounds in four months, a little less than four pounds a month.

CASE IV.—*Obesity; fatty heart; dyspepsia.*

A gentleman, weighing 237 lbs., height 5 feet 6 inches, came under my care in December, 1898. Pulse 100, no intermission. Apex beat feeble, difficult to locate, heart enlarged. Patient a smoker. Lithaemic. No organic murmurs heard. Pain at apex, giddiness of head, acute gaseus dyspepsia, and dyspnoea. Apex four and three-fourths inches from the median line, and three-fourth inch from the intermammary line.

December 28th—Dyspepsia and regurgitation. Under dermatol and Carlsbad salts, and anti-lithaemic diet, and abstention from smoking, these disappeared.

January 27th—Patient took the modified Nauheim course of resistant exercises and baths. Apex now four inches from the median line, and three-fourths inches from the intermammary line. Patient takes no medicine. Weight, 217 lbs., stripped. Had apparently lost about ten pounds in a month. Pulse 79 to 70 before exercising and baths, and 75 to 70 afterwards. Pulse is of better quality, dyspnoea has gone, and the patient was able to walk fifty-five blocks during the past week on a single day. "Post Graduate."

Two Cases of Primary New Growths of the Epiglottis.—Schiller (*Berliner Klin. Wochenschrift*, Nos. 41 and 42, 1898) reports two cases of primary malignant tumours of the epiglottis. It is curious that malignant disease should so seldom attack an organ so exposed to injury, but carcinoma of the epiglottis is rare, and sarcoma still more so.

(1) A nodular tumour of the epiglottis appeared in a man aged 62, and was at first taken for a sarcoma. This was removed by Czerny through an incision in the thyro-hyoid space, without a preliminary tracheotomy. A few months later a carcinomatous tumour was discovered on the left half of the tongue, with an infiltrated submaxillary gland. These were removed, tracheotomy being performed for œdema of the glottis. The patient recovered and was able to swallow soft solid food, though the prognosis, as regards recurrence, was still doubtful at the time of writing. It was not certain even after a microscopical examination of the tumour of the epiglottis whether it was a carcinoma or sarcoma or both. From a consideration of the whole course and anatomy of the disease the writer came to the provisional conclusion that a carcinoma developed from a pachydermatous thickening of the epiglottic epithelium, and caused a metastasis in the lymphatic glands of the same side, the carcinoma of the tongue which succeeded it being possibly an independent growth.

(2) A carcinomatous cauliflower excrescence grew from the epiglottis in a woman aged 61. It was removed, but the woman died of septic pneumonia, in spite of careful feeding with the œsophageal tube.

DIPHTHERIA ANTITOXIN BY THE MOUTH.

BY JOHN ZAHORSKY, A.B., M.D.

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Does diphtheria antitoxin enter the circulation when administered by the mouth? Roux has denied this. Escherich (*Wiener Klin. Wchschr.*, 1897, 799; *Pediatrics*, March 1, 1898) failed to detect it in the blood of infants after a dose had been given by the mouth. In fact, he takes occasion to warn clinicians not to rely on its use in this way as it is ineffective.

In the spring of 1897 (*New York Medical Journal*, March 19, 1898) I reported the results of its use by the mouth in a series of nine cases, all of which recovered. I also reported its use as a prophylactic measure in about forty cases in which there had been more or less exposure to the infection. In not a single instance did diphtheria supervene. While as a curative measure the administration *per os* presented certain defects, as an immunizing method it certainly seemed the more ideal; consequently, I urged that this method should receive the preference when prophylaxis was sought. This article has been widely quoted and, perhaps, has induced other physicians to use antitoxin by the mouth.

Yet Escherich asserts on the ground of animal experimentation that the antitoxin is not appropriated by the organism, when administered by the digestive tract.

Were my cases really only a fortunate series, which terminated favorably without antitoxin? While admitting that from a scientific standpoint the number of cases is insufficient to prove the curative effect; nevertheless, the promptness of cure after two days, convinced me that the serum is absorbed. More conclusive in the demonstration are the results in the large number of cases immunized. In several families the children were compelled to remain in the same room with the patient, and yet none contracted the disease. Since the publication of this report, I have used this method of immunizing infants in an additional fourteen cases in private practice, and one hundred and fifty infants in the Bethesda Foundling Home. Twice in this institution, after an outbreak of diphtheria among the inmates, the little patients were given antitoxin or antitoxic milk by the digestive tract, and yet none contracted diphtheria. An apparent exception took place, but it was shown that the baby vomited the antitoxic milk. Clinically, therefore, it seems demonstrated that antitoxin can be absorbed by the digestive tract. But we have biological tests to support this view.

Fisch (*New York Medical Journal*, April 9, 1898) after a large number of experiments on animals, concludes that the antitoxin reappears after twenty-four to twenty-six hours. To quote his own words: "It has, therefore, been established that while after twenty-four or thirty-six hours nearly the whole amount of antitoxin can be recovered from the blood, when the antitoxin has been taken by the mouth, after five, six, nine and eleven hours nothing, or very little of it can be found."

Escherich surmised that the gastric juice probably destroys the antitoxin, but Fisch has shown that artificial gastric juice does not modify its action. Four puppies each received a lethal dose of diphtheria antitoxin; the first received at the the same time antitoxic milk by the mouth, the second received the milk twelve hours before the toxin, the third received the milk twelve hours after the toxin, the fourth received no milk. Animals three and four died in thirty-six hours, the second in ninety hours, and the first in sixty hours. The last two died rather of the effects of local necrosis. Experiments with kittens showed a more satisfactory result. Three kittens out of five were saved, and in these the milk and antitoxin were given twelve, twenty-four and thirty-six hours before the toxin. When antitoxin and toxin were given at once the animal died. These experiments were multiplied, concerning which I refer to the original article, and there can be little doubt that after thirty-six hours the antitoxin is demonstrable in the blood, in both the old and young.

These facts, together with the clinical experience mentioned, certainly establish that antitoxin *per os* is absorbed after thirty-six hours, and, therefore, as a prophylactic measure is perfectly ineffective. I understand that Dr. Fisch is now engaged with another series of experiments on the same subject, the report of which we anxiously await. Why antitoxin does not at once enter the blood, is not known; neither do we know why when injected hypodermically it does not show its action for many hours.

It might be said that a small quantity of toxin enters with the serum and this immunizes; in fact, Hueppe has asserted that immunization is effected by the toxin rather than antitoxin.

It has been repeatedly demonstrated, however, that the toxin of diphtheria does not enter the circulation, and Nencki proved that the pancreatic juice destroyed it. We can, therefore not admit the assumption that the small quantity of diphtheria toxin caused the immunization after thirty-six hours. Possibly the antitoxin is retained in the liver or epithelial lining of the intestine. I shall continue to use antitoxin by the mouth as a prophylactic measure notwithstanding the experiments of Escherich.

The Cure of Cervical Lymphadenitis Without Scars.—Calot (*La Tribune Médicale*, October 26). Cervical lymphadenitis terminates more or less rapidly either in resolution or softening. Resolution is not rare. Softening is desirable, for it permits of cure without scar. Before the skin is altered the cold abscess should be punctured with a fine needle and a modifying injection used. 99 times out of 100 complete cure without scar will be obtained.

If after a period of six months, a year, or two years at the seaside the glands remains enlarged and hard, softening should be produced by an injection. The best is a 1 in 50 solution of chloride of zinc. Two or three grammes injected three or four times at intervals of two days almost constantly produces softening. The treatment is completed by puncture and injections of camphorated naphthol.

A cutting operation is necessary only when ulceration has occurred.

RELATION OF CHOREA TO RHEUMATISM.

A continuation of the Discussion on Acute Articular Rheumatism before the Chicago Society of Interna Medicine, Feb. 23, 1899.

BY ROBERT B. PREBLE, A.B., M.D., CHICAGO.

The subject of the relation existing between chorea and rheumatism has been frequently discussed during the greater part of the last hundred years; but as yet no definite conclusion has been reached, and none can be reached so long as we remain in ignorance of the exact etiology and pathology of the two diseases. What the relation is we can not know as yet, but I believe that to-day almost all will agree that there is a relation. We must, however, carefully avoid the error of Billiet and Barthez, Joffroy, Graves and Sturges, who believe that all cases of chorea are of rheumatic origin. Starting then, with the confession that we have no facts to prove the nature of the relation, let us see what evidence there is to prove that there is a relation.

In the first place, how common is rheumatism in children? I have not been able to find much definite information upon this point. Coutts at the East London Hospital for Children, found that 16 per cent. of 168 consecutive cases had had rheumatism. Donkin states that 18 per cent. of hospital cases taken at random are rheumatic. These statements are surprising, even when due allowance is made for the greater frequency of rheumatism in England, and are more remarkable when we recall the statement of Senator, in "Ziemssen's System," that the morbidity of acute articular rheumatism is 11.5 per cent. for London. If we accept the astonishing figure of 11.5 per cent., a figure certainly far beyond the averge for the world, we must remember that this is for all ages, and according to the statistics of the Committee of the British Medical Society for the investigation of acute rheumatism, only 6 per cent. of rheumatics are under 10 years of age; in other words, something less than 1 per cent. of children in general suffer from rheumatism. I fully realize that this method of calculation is crude and liable to many errors, but I believe that the result is not far from average experience. Sée states that in 11,500 cases admitted to the Children's Hospital in Paris, 48 had simple rheumatism, and 61 rheumatism combined with chorea, i. e.; less than 1 per cent. were rheumatic, and more than half of the rheumatics had chorea.

Next, what proportion of cases of chorea have had rheumatism? The statistics vary widely, ranging from those of Hughes and Brown, who found only 15 of 104 cases of chorea without a distinct rheumatic history, to those of Steiner, who found only 4 cases of rheumatism in 252 cases of chorea. Sturges admits that 42, i. e., 20 per cent., of his 219 cases of chorea had had rheumatism; Donkin that 28, i. e., 27 per cent., of 104 cases were rheumatic. Both these authors place the frequency of rheumatism in children at from 15 to 18 per cent

I have added the statistics of Hughes Brown, Sée, West, Ziemssen, Steiner, Ogle, Koch, Mackenzie, Sturges and Donkin, making in all 1838

cases of chorea, with 381 cases of rheumatism, i. e., 20.16 per cent. Other authors, Henoch, for example, state that one-third of the cases of chorea are related to rheumatism. If our first conclusion, that 1 per cent. of children in general suffer from rheumatism, is correct, we must assume that chorea and rheumatism have some relation, when we find that 20 per cent of choreic children have had rheumatism.

It would be interesting to know what percentage of rheumatics subsequently develop chorea, but there are not, so far as I know, any statistics bearing upon this point. Meyer, Rufz, Sée and Osnann state that about 0.66 per cent of the cases treated by them have chorea. We may add to this the definite statement of Sée that he found 43 cases of simple rheumatism to 61 cases of rheumatism combined with chorea.

In 1893 Lewis presented a careful report upon the seasonal relation of corea and rheumatism, based upon 1383 separate attacks of chorea and 675 separate attacks of rheumatism. His paper is illustrated with charts in which the curves for rheumatism and chorea run almost parallel, with the lowest point in November and the highest in March. This corresponds closely to the statement of Koch, who found 29 per cent. of cases in the first quarter of the year, 21 in the second, 13 in the third, and 37 in the fourth, while Wunderlich found 30 per cent of the rheumatism in the first quarter, 23 in the second, 18 in the third, and 28 in the fourth.

Before leaving the statistics, let us consider the percentage of rheumatic and non-rheumatic choreics which present endocarditis, starting with the statement that Whipman, in 655 cases of acute articular rheumatism, found 205 cases of endocarditis, i. e., 31 per cent. In the report of the British Committee upon chorea, it is stated that 141, i. e., 32 per cent. of the 439 cases included in the report had organic heart lesions. Of these 141 cases, 71 were associated with rheumatism. Of the 116 cases of chorea which were rheumatic 59 i. e., nearly 50 per cent had heart disease. Different authers make widely varying statements. Pye Smith reports 11 fatal cases of chorea, all with endocarditis; Rogers 71 cases, with 47 cases of simple endocarditis, 5 of pericarditis, and 19 endopericarditis; Kaulich 62 cases, with 12 of heart disease; Koch 153 cases of chorea, with 21 valvular defects. These statistics are unsatisfactory, as they do not enable us to separte the rheumatic from the non-rheumatic cases, Donkin makes a report attending to this point. He reports 33 cases of chorea without history of rheumatism, who presented heart murmurs during the course of the chorea. In 28 of these he has notes on the condition of the heart at the time of discharge, and finds that 13, i. e., nearly 50 per cent., showed murmurs. Unfortunately, his data are not sufficient to allow us to decide how many of these murmurs were organic and how many were functional, but allowing even half of them to be functional, we have left 25 per cent. of non-rheumatic choreics to contrast with 31 per cent. of rheumatics who develop endocarditis. That is, we have two diseases which present the same complication in about the same percentage.

Let us briefly review other complications and symptoms common to rheumatism and chorea. Both diseases show a great disposition to return, one attack creating a disposition rather than an immunity. Both show erythematous and urticarial eruptions. Both occur as complications or sequelæ of a large variety of diseases, especially those characterized by inflammations of the pharynx. Both are at times complicated by local suppurative processes.

Those who deny any relation between the two diseases base their opinions mainly upon the following points: They deny that the statistics show any greater frequency of rheumatism among choriec than among other children. They draw attention to the fact that chorea occurs mostly among children, while rheumatism is far more common among the adults, who rarely have the Sydenham chorea, and that chorea is about three times as common in females as in males, while rheumatism is somewhat more common in males. Others, as Billiet and Barthez, note that in certain places, as Genf, rheumatism is very common and chorea is rare. Leube and other authors draw attention to the fact that the salicylates promply affect rheumatism, but have no effect upon chorea, and that therefore, there can be no relation betwen the two. With this review of the evidence pro and con, let us see what suggestions we can find as to the nature of the relation between the two diseases.

A discussion of the relationship between rheumatism and chorea is so intimately connected with the etiology of chorea that one can not be considered independently of the other. There have been a variety of theories proposed to account for the symptoms of chorea, but we must not forget that all are theories. A historic and geographic study of these theories, if I may so express it, is interesting. Thus the embolic theory is an old one, and comes from the days of grosser pathology. The theory that chorea is a neurosis, a mysterious something based upon a degeneration or an inherited disposition, is urged by the French, who among the moderns are most fond of the mysterious. Lastly come the various modifications of the theory of infection or intoxication, which corresponds to the modern tendency to refer diseases to the direct or indirect action of micro-organisms. The embelic theory, which is urged by Ziemssen in his article on chorea, as practically the only theory, is declared by Gowers to have merely a historic interest There can be no doubt of the fact that we see choreiform movements as symptoms of organic lesions of the brain, but it is questionable whether these cases should be classed with the Sydenham or vulgar chorea. The embolic theory for the chorea demands the presence of an endocarditis to serve as a source of emboli, but clinically many cases of chorea are not accompanied by endocarditis, and the autopsies of a certain number of fatal cases of chorea show no endocarditis. Moreover, the examination of the brain in fatal cases of chorea shows no changes which can be referred to embolism. Endocarditis is far more frequent, even in adult than in child life, yet chorea in the adult is rare. This difference in frequency can be quite satisfactorily explained in another way, but any difference between an adult and a child which predisposes the latter to cerebral embolism, must be a

mechanic difference—and we know of no such difference—between the circulatory systems of adults and children. The same argument applies to the difference in the frequency of chorea in male and female children. Lastly, we may mention the pathologic facts that emboli when they occur are not often small and numerous, but are usually few and large, that they effect the kidney and spleen more often than they do the brain, that clinically chorea is not accompanied by symptoms pointing to embolism of other organs, and lastly, that the so-called malignant endocarditis, which so frequently gives rise to embolism, is rarely accompanied by chorea. I believe we may safely dismiss this theory from our minds.

The neurotic, the infectious and the intoxication theories of the origin of chorea are so interwoven that it is difficult, if not impossible, to discuss one without at the same time discussing the others. Thus we find that there are no demonstrable structural changes in the brains of patients dying with chorea; the chorea presents, then, one of the most important characteristics of the functional neuroses. Like hysteria, chores may appear suddenly after a physical or paychic trauma in an individual previously apparently normal. Most of the cases of chorea are in the female the sex most liable to suffer from the neuroses. There is also some evidence that children of neurotic parentage are more frequently subject to chorea. However, Koch, who attended to this point especially, found that in 80 per cent. of his cases that was no neurotic taint.

Joffroy calls chorea a cerebrospinal neurosis of development, *néurose cérébro-spinal d'évolution*, an abnormal development of the motor apparatus occupying the same relation to the nervous system which clorosis does to the circulatory system. He considers the choreic a degenerate, in whom the malformation of the motor appartus remains latent until some precipitating cause makes it manifest. Such precipitating cause may be an infectious disease, such as rheumatism, pneumonia or typhoid. He regards the joint changes seen in chorea as arthropathies similar to those seen with myelitis, and of undoubted spinal origin. Charcot regarded the frequent association of joint changes and chorea in the same individual or in individuals of the same family as another manifestation of the relationship between diseases of the nervous system and of the joints, to which he more than any other drew attention. I do not at all believe that Joffroy is correct in calling the joint manifestations of chorea arthropathies of spinal origin, but we must assume that there is some difference in the nervous apparatus of young girls especially, which render them liable to chorea whenever any of the immediate exciting causes come into play.

The features common to the neurotic, infectious and intoxication theories of chorea is that the function of the nerve-cells is altered without their being any structural changes demonstrable by any known method of study; the "moving equilibrium" of the cells is disturbed, but not destroyed. We can imagine that such disturbance of the equilibrium may be excited by a wide variety of causes. For example, such disturbances may be due to physical or psychic trauma, and there can be

no doubt of the clinical fact that chorea does develop so immediately after trauma that we must believe the trauma the cause. Koch found a psychic trauma stated as the immediate cause of chorea in 35 of 66 cases. Mackenzie found that in 44 of 98 cases referred to fright the chorea developed within one week.

I believe that in the majority of the cases, however, the disturbing factor is more tangible than a psychic trauma. An individual predisposed by age, sex, or other unknown causes acquires some infective process. Various toxic bodies resulting from the bacterial activity are absorbed, and, acting probably upon the cells of the motor area, excite a chorea. Here also, the changes in the cells are not structural. but are nutritional or functional. Dana, Duckworth, Marfan, Koch and others express the opinion that chorea is due to the action of toxins resulting, not from a specific infection, but from a wide variety of bacteria. It is a well-established clinical fact that chorea occurs either as a complication or sequel of a wide variety of infectious diseases—rheumatism, whooping-cough, scarlet fever, measles, smallpox, typhoid, influenza, gonorrhea and others. It is not so generally known that chorea may bear the same relation to more localized infective processes, such as otitis media, furunculosis, dental periostitis and impetigo. Marfan found in 46 cases of chorea not postrheumatic, 28 cases almost immediately following some local or general infective process. In 19 cases he could get no history of any antecedent infection or hereditary taint but states that these cases were mostly hospital cases, with incomplete histories. Marfan claims that almost 50 per cent. of cases of chorea have had rheumatism. All these diseases are of undoubted bacterial origin, some due to well-known bacteria, such as the various pus cocci, the gonococci, the typhoid and influenza bacilli, others due to unknown bacteria. It is not likely that the chorea is due to direct action of these widely varying bacteria upon the nerve-cells; for usually the effects of direct microbic action are gross enough for detection, and moreover, if the bacteria acted directly they could be easily found in the nervous tissues. I believe we are justified in assuming that widely varying bacteria produce chorea indirectly by means of toxic bodies resulting from bacterial life. The action of toxins is less specific than that of bacteria themselves, and there are numerous well-known examples of the same effect due to toxins from widely varying and perfectly specific organisms. Furthermore, these toxins are often curiously selective in their action. Multiple neuritis is the best instance of a like effect following a wide variety of toxins. There is no acute or chronic infectious diseases which does not at times give rise to multiple neuritis, and there can be no reasonable doubt that this neuritis is the result of the action of toxins formed by the bacteria causing the disease. We know also that an exactly similar affection of the nerves frequently results from the action of toxic bodies which are much more tangible than the bacterial toxins—such bodies as alcohol, lead, mercury, arsenic.

Multiple neuritis will serve also as a common example of the selective action of toxins. What can be more definite than the distribution of the action of lead. We may, therefore, assume that c

example of a like effect from widely different toxic bodies, both bacterial and chemic. I may mention incidentally that chorea occurs sometimes as the effect of chronic mercurial poisoning. Why these bodies affect the nerve-cells of the motor area in certain individuals and do not do so in others is unknown to us, just as it is unknown why a typhoid fever in one case is followed by chorea and in another by neuritis. The special application of all this that rheumatism is an example of an infectious disease due to some yet unknown bacterium, which, more than any other organism, manufactures toxins which produce chorea by action upon the cells of the motor area. There seems to me to be no necessity, as there is no evidence, for the theory that chorea is a specific infectious disease due to a definite, though yet unknown organism. We may draw the following conclusions:

1. There certainly is some relation between chorea and rheumatism.
2. Rheumatism is much more frequent in children suffering from chorea than in children in general.
3. Rheumatism excites chorea by the selective actions of toxins upon the motor cells of the cortex, causing functional but not structural changes.
4. Rheumatism shares this relation to chorea with a great number of other infectious diseases.

Family Spastic Paraplegia.—In a recent number of the *Neurologisches Centralblatt* an abstract appears of an important paper on this subject by M. Lorraine of Paris. He gives a short account of "family" diseases of the nervous system. He points out that the lesions are often diffuse, not always affecting definite systems of fibres in the cord, and that transition forms are very numerous. Nervous and mental diseases, syphilis, alcoholism, relationship between father and mother. all predispose to family spastic paraplegia. It affects the sexes equally. Infectious diseases and traumatism seem occasionally to precede the manifestations of lateral sclerosis. The typical symptoms are spastic gait with increased reflexes and ankle clonus without sensory impairment or interference with the sphincters. Occasionally optic atrophy is observed. Rarely intelligence is defective. The course is usually one of gradually increasing interference with working power, and death is often the result of tuberculosis. The only necropsy has been reported by Strümpell, who found primary combined sclerosis of the pyramidal tracts, of the direct cerebellar tracts, and of the columns of Goll. The former were affected chiefly in the dorsal, the latter chiefly in the cervical, region. Myelitis, compression myelitis, spinal syphilis, and multiple sclerosis, are all to be distinguished, the principal differentiating features being the absence of sensory and sphincter impairment in family spastic paralysis and the family history. Hereditary cerebellar ataxy presents some features of similarity, but it is sufficiently distinguished by the ataxy of the gait. As to treatment, warm baths, massage, and rest are recommended, and in certain cases tenotomy, or even it is said neurotomy, may occasionally be useful.—*Lancet*, Dec. 3.

THE PREVENTION OF PREMATURE SENILITY.

The January and February, 1899, numbers of the *Centralblatt fuer die Gesammte Therapie* contain an abstract from an instructive article on the prevention of premature senility by Hermann Weber, which appeared in the *Zeitschr. fuer Diat. und Physik. Therapie*, Vol. 1. No. 1. The author points out that the longest possible preservation of the faculty of remaining bodily and mentally vigorous depends upon the proper nutrition of those organs that are most essential to life; especially the circulatory organs, from the heart down to the finest capillaries veins and lymphatic vessels. When the fine vessels of the brain lose their energy, the nerve-cells degenerate and the most manifold manifestations of diminishing brain activity make their appearance. These manifestations are sometimes more pronounced in the sphere of thought, at others in the functions of the large ganglia at the base of the brain. In the same manner do the effects of the degeneration of the finer vessels of the heart, glands, stomach and bowels vary with regard to the functions that are most intensely disturbed. In paying attention to the preservation of the efficiency of the circulatory organs it is important to take into consideration the premature tendency of degeneration of certain systems of organs in families. It is necessary, therefore, to learn in each individual instances, the tendency of such degenerations in the parents and relatives. For there are many families in whose members the cerebral vessels degenerate relatively early in life especially as a result of atheromatous and kindred processes, which is the case in a more pronounced measure in males than in females. This is in many instances due to a too abundant supply of food, too little physical or mental exercise, or too much sleep; the latter being not rarely associated with a more than necessary food supply and sometimes the use of alcoholic beverages and the immoderate use of tobacco. The prevention of degenerative processes is accomplished by great moderation, plenty of physical exercise—diversified not monotonous—mental activity of fascinating interest, and, if possible, of an exhilarating nature.

Of great benefit to most persons, even those who have a regular calling, is the early cultivation of a pleasant occupation—a so-called "hobby," aside from the kind of work which is required for the purpose of earning a livelihood or similar duties. For circumstances may suddenly require the discontinuation of the activity connected with one's calling, and the creation of new interests at an advanced age is not possible for everybody, unless they have previously been cultivated. In England most soldiers are very frequently mustered out before they have reached their fiftieth year; those who occupy an office in civil life keep their positions a little longer, but many cannot remain in office after they have reached the age of sixty years. Also merchants, manufacturers, engineers and architects often retire from active work at this age. Among these classes an early senility, especially as regards the psychic functions, is very frequent, and when it is possible to create new interests the augmentation of physical and mental capacity is usually very great.

Very powerful factors are joy and hope. Sorrow and loss of hope create in some persons such a depression of spirits, that they become completely inactive and indifferent, and lose all interest in their surroundings. In several cases the author observed, after heavy losses, which acted like a "shock" or blow, that the action of the heart became weak and irregular, that in a short time dilatation of the heart and valvular murmurs developed, that gastric and intestinal activity almost ceased and edema appeared. In some cases lasting mental dullness and a kind of senile dementia supervened. In other cases death from a ".broken heart" resulted within a few days or weeks. Deceased respiration and imperfect blood supply to the brain may be the main agencies resulting from the unfavorable influence of psychic depression. It is hardly possible to lay sufficient stress upon the influence of a depression of spirits, though an explanation of its exact action is not perfectly plain. It is an unmistakable fact that the *psyche* receives and executes the first impression, but the heart and circulation form the mechanical intermediate links in the chain of action; increased blood supply as a result of the exhilarating influences, as joyful mental activity, hope; decreased supply in consequence of the depressing influences, like sorrow, hopelessness and mental inactivity.

There are many families in which the heart itself is the cause of the beginning premature senility. In these cases treatment has to begin very early, if it is to be successful. As early as at the age of twenty years or sooner must such a tendency be counteracted; principally by systematic exercise of a diversified nature; walking on a ground with a moderately upward inclination is of paramount importance, especially according to the well known Oertel's system of *terrain* exercise, horseback riding, rowing and other physical passtimes. The proper measure of physical exercise must be adapted to each individual case. Not all passtimes are of equal value; those connected with sudden vehement motions are much less appropriate than the regular and longer continued exertions. Moderate cycling is also useful. Of particular value, however, for the purpose of strengthening the heart, are methodical respiratory movements, alternating with complete expirations.

In another class of persons, especially women whose nervous system becomes easily exhausted, help is fr quently very difficult. The strength of such persons must be spared in a high degree and the nutrition of their tissues and organs enhanced. Many individuals belonging to this class are improved or cured by Weir Mitchell's method. The author claims, however, to have frequently obtained favorable results without this "somewhat difficult" procedure.

An important system in maintaining for a long period of time the physical and mental energies is the digestive apparatus. In most persons a diminution of the digestive functions takes place after the sixtieth year, in many already after the fiftieth year or still sooner. With the beginning of the downward course of development the acquisition of new material by the tissues and with it the want for food becomes less. The taking of food must therefore be in harmony with these conditions, and

its nature must be more digestible and less irritating. With a great physical and mental activity a larger supply of food is tolerated. with a diminished activity and a large supply of food sooner or latter tissue changes of a diverse nature make their appearance. These may consist in a superabundance of fatty tissue, in a degeneration of the muscular fibres of the heart and of the blood vessels, in Bright's disease, rheumatism, gout, glycosuria. chronic catarrhs, etc, and these changes lead in a diversified manner to premature senility. After such pathological changes have taken place, but have not progressed very far, much may be accomplished by dietetic treatment, and the sooner this treatment is begun, the more success may be expected from it; but it is usually necessary, after a successful cure, to regulate the entire future life so as to counteract the tendency to these pathological changes.

The premature decay of the mental and physical functions is in many persons created by the immoderate indulgence in alcoholic beverages. There cannot be any doubt that for the majority of people a very moderate use of alcoholic drinks is not harmful and that for many individuals, who have a weak heart, the moderate use of alcohol is even useful and necessary; but most persons can very well do without alcohol and do well to avoid it entirely. Considering the frequency in many families of the hereditary element of alcoholism it is of importance in such cases to counteract at an early period of life the immoderate use of alcoholic beverages, or still better, to prohibit their use entirely. Smoking creates, in fat persons, weakness of digestion, of the heart, spinal cord, and brain, and, according to the author, it produces the complete picture of premature senility.

The theory that by abundant mental activity and physical exercise the span of life is abbreviated and that the measure of life-energy allotted to the individual is thereby sooner exhausted, the author considers to be incorrect.

Diminished power of resistance against meteorologic influences must also be taken into consideration. Cold, moisture, fogs and winds lead, in old persons, to all kinds of affections which rob them of their exercise in the open air, which in turn weakens the energy of their organs and favors the establishment of premature senility. If it is possible, therefore; old people should, during the winter, sojourn in mild climates where the noxious elements are present in an ameliorated degree.

The author's arguments are undoubtedly in harmony with physiological facts, and his views are not extreme ones on any points of this interesting and important subject, which teaches the art of growing old with the most possible retention and mental and physical vigor, with which is associated, of course, resistance against all kinds of disease aside from those pathological conditions which are peculiar to senility.

Recent Medical Therapeutics

Treatment of Pneumonia

As a rule certain diseases prove more fatal, not only in given districts but during certain periods of time, along particular areas of territory.

Twenty years ago, and preceding the appearance of La Grippe in its epidemic form, pneumonia proved as dangerous as it does at the present time. Medical men were at a loss, not for a remedy for the disease alone, but even for a logical line of treatment. The celebrated Dujardin-Beaumetz became so skeptical that he prescribed stimulants, regardless of therapeutical conditions. The mortality in his ward at the Hotel Dieu in Paris proved that his patients fared no worse than the others submitted to the antiphlogistic remedies then in vogue.

Codeine was considered the best remedy known possessing a marked and distinct effect upon the hypersecretions of the bronchial mucous membrane. What was desired was an analgesic possessing antipyretic properties which could be safely used. This has since been found in antikamnia which can be safely exhibited, especially on account of its not having a depressing effect on the cardiac system.

Doses of from five to ten grains of antikamnia administered under ordinary conditions do not develop any untoward after-effects. In the treatment of pneumonia, antikamnia is indicated as a necessary adjunct to codeine, on account of its analgesic and antipyretic properties and particularly because it acts as a tonic upon the nerve centres. The tablets of antikamnia and codeine containing four and three-quarter grains antikamnia and one-fourth grain sulphate of codeine present these two remedies in the most desirable form. One tablet every hour, allowed to dissolve slowly in the mouth, is almost a specific for the irritating cough so often met with in these complications. For general internal medication it is always best to crush the tablets.

The Prompt Solution of Tablets

We are glad to know that the Antikamnia people take the precaution to state that when prompt effect is desired the Antikamnia Tablets should be crushed. It so frequently happens that certain unfavorable influences of the stomach may prevent the prompt solution of tablets, that this suggestion is well worth heeding. Antikamnia itself is tasteless, and the crushed tablet can be placed on the tongue and washed down with a swallow of water. Proprietors of other tablets would have had better success if they had given more thought to this question of prompt solubility. Antikamnia and its combinations in tablet form are great favorites of ours, not because of their convenience alone, but also because of their therapeutic effects.—*The Journal of Practical Medicine.*

Muscular Soreness and Lagrippe Pains

℞ Antikamnia (Genuine).
Quin. Sulph. ..... aa 3 i
Pulv. Ipecac et Opii ..... grs. xx
M. ft. Capsules No. xx, dry.
Sig.—One every two or three hours.

Cough—Grippal

℞ Antikamnia (Genuine) ..... 3 i
Vin. Ipecac.
Ammon. Mur. ..... aa 3 ii
Aquæ Cinnamomi ..... 3 i
Syr. Tolutani ..... 3 iii
Mx. Sig.—Teaspoonful at a dose.

Cough—Tickling

℞ Antikamnia and Codeine Tablets ..... No xii
Sig.—Crush and take one every 2 or 3 hours.

The Canada Lancet

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EDITORIAL.

SMALLPOX AND VACCINATION.

More than two months ago, the Commissioner of Health of Chicago, Dr. A. R. Reynolds, issued a warning sheet in respect to vaccination for meeting a possible invasion of the city by smallpox. Official reports, he said, record the recent invasion of nineteen States and sixty-three localities by the pestilence in this country alone, and the newspapers add daily to the number. Some of these localities are within a few hours' distance of Chicago, and it is not only possible that there are concealed or unrecognized cases of the disease in the city at the present time, but it is more than probable that persons from infected localities are daily riding in our street cars, associating with our citizens in public places, and even visiting in our homes

When the contagion becomes so wide-spread as it now is, it is obviously impossible to prevent its introduction into a new city like Chicago, with its numerous means of communication with the rest of the country. Sooner or later the disease is sure to find its way into the city by some unsuspected and unpreventable method.

Almost the same fear may be felt in respect to cities in Canada, and health authorities here should be prepared. To be forewarned should result in being forearmed.

In *The New York Medical Journal* of March 25th we read :—Outbreaks of small-pox have been reported from a great number of places, both in the United States and elsewhere, during the last few weeks, and some cases have occurred in New York.

There are now, April 1st, the secretary of the Provincial Board of Health, Dr. Bryce, reports, no places in Ontario in which smallpox is known to exist. Since the first of January however, Dr. Bryce states, there have been fourteen outbreaks and thirty-five cases of the disease, with seven deaths. There was no spread of the disease from anyone of the houses in which the outbreaks occurred, to any other house, which speaks well for the isolation measures.

Other outbreaks are liable at any time, and, as urged by the Chicago Commissioner in his circular, it devolves upon every citizen to see to it that he himself and those dependent upon him are thoroughly and promptly protected against this loathsome pestilence, Parents and guardians cannot escape the charge of blood-guiltiness if, failing to secure this protection for their charges, death follows an attack of smallpox—a disease of all diseases the most positively preventable. Employers and others having charge of wage-workers should give this matter attention, from pecuniary considerations if no other. Similarly as to railway employees, who are particularly exposed, and the employees of manufacturing establishments, department stores, etc.

Glycerinated vaccine may now be obtained at a very high standard of purity. That of Park, Davis & Co., it may be said, if not the best is not second to any. It is produced and put up under aseptic precautions not less stringent than those with which the modern surgeon surrounds an operation. Every parcel obtained from each animal is physiologically tested and the hermetically sealed capillary tubes effectually exclude germ contamination. In respect to the percentage of successful vaccinations, reports from those who have used it give excellent account.

It is, too, becoming well known that the proper use of reliable glycerinated vaccine gives rise to the miminum of discomfort and ensures the utmost freedom from danger of infection from the painfully "sore arms," unsightly scars and other troubles which have so commonly attended the use of vaccine "points."

Medical officers may well be on the alert.

PERSONAL.

Dr. Ernest Hall, of Victoria, B. C., paid the LANCET a visit on his way to Johns Hopkins Hospital, Baltimore; where he intends spending some time in special work and a general post-graduate course. The doctor speaks very confidently of the future of Victoria and is preparing himself to meet the increased wants of the inhabitants.

EDITORIAL NOTES.

THE HUNTERIAN ORATION: THEN AND NOW.—The Hunterian Oration, in 1899, delivered by Sir Wm. MacCormac, is pronounced a model. Doubtless it was. Nearly three-quarters of a century ago, in 1826, what was it? Sir Charles Bell, in a letter dated January the 9th of that year, describes it as follows:

"As to the Hunterian Oration, I know not what is to become of it. It is given in regular succession by the Seniors of the College. To-day, Sir Anthony Carlyle delivered it. I heard him at the public dinner of the Hospital boast what he would do. I saw the moment I entered that he would fail. He had a large volume of manuscript before him, suited to a course of lectures rather than to one discourse; and as many shell-fish as you see in an oyster shop; and he had the folly or the wit to make the *oyster* the subject of the Hunterian Oration. He began with a supercilious confidence, and, after many interruptions, finally broke down, after an hour and a quarter's delivery, amid the noise and hisses of the audience."

THE PRINCE OF WALES WAS PRESENT at the recent Hunterian Oration by Sir Wm. MacCormac, and in the evening dined with the members of the Royal College.

OYSTER FEVER? AND TYPHOID FEVER.—That oysters may in some way give rise to typical typhoid fever is now accepted as proved, J. W. Moore, M.D., in the Practitioner for March, endeavours to show by reports of clinical cases, that oyster poisoning may present itself under at least three forms: first, as an acute gastro-enteric catarrh; second, as a specific continued fever which is not typhoid, but probably due to ptomaine poisoning; and third, as true typhoid fever, by having acted as Eberths bacillus typhosus. Are these distinct conditions or diseases? or are they but caused by the different degrees of a ptomaine poisoning conveyed by morphological bacilli in different degrees of virulency or different physical conditions from their environment?

TETANUS, ANTITOXIN AND PHENOL.—The researches of Kitasato into the remarkable conditions, favorable or otherwise, to the development of the tetanus bacillus in the living human body showed that the infection of this disease is by no means a simple process. The uncertain results of the serum-therapy in respect to the disease suggest that the mutual reactions of the toxin and antitoxin are equally remarkable and complex. What does all this point to? Is it to the correctness of the present

general views of the "germ theory"? The practical point is that, it is now clear that much better results are obtained by the hypodermic injection of phenol (carbolic acid) than by the antitoxine. Zeri mentions 24 cases treated by this remedy, in Italy, France, Germany and Russia, without a fa lure. Arcoli has added ten more, with but one failure, and this before the treatment was well understood. Doses of 3 to 4 cg. of a 2 to 3 per cent. solution are given several times a day, and 35 cg. have been given in the 24 hours. If the patient's strength be kept up, the muscular spasms diminish in a marked degree.

HARD WATER AND THE TEETH: From the examination of the teeth of 20,000 Bavarian recruits annually, C. Rose has come to the conclusion that they are much the best in those districts where the water contained the largest amount of lime salts.

DIGITAXIN: The Editor of the University (of Pennsylvania) Magazine, after giving the experience of Masino, Vatin, Corin, Wenzel and others with this drug, says,—

It is evident, from the above testimony, that we have in digitoxin, if not a perfect substitute for digitalis, a remedy of great value, tolerably free from the untoward effects of the crude drug, convenient of administration, and one that may be used with great advantage when the liquor preparations of digitalis are not well borne. Digitoxin may be administered by the mouth, by the rectum, or hypodermically. The dose by the mouth is from $\frac{1}{250}$ to $\frac{1}{125}$ of a grain, twice daily, by the rectum $\frac{1}{100}$ to $\frac{1}{50}$ of a grain.

RESULTS OF COUSINS MARRYING.—Dr. John Angles has investigated the results of one hundred cases of marriage between cousins and one hundred where no relationship existed. The former showed a lower percentage of mental diseases and of sterile marriages. These figures are similar to those of Huths investigations.

SCHLEICHS MIXTURE FOR ANASTHESIA.—Schleichs believing that anasthetics are dangerous in proportion as their boiling points differ from the temperature of the body, recommended the mixture named below, the boiling point of which is 100° F., as giving good results; while Walter Lathrop, M. D. (Supt. Penn. State Hospital) states that Maduro, Mayer, Simpson, Delavan and many others have tried it and that the majority have been well pleased with its action while he himself has used it in 150 cases and the results have made him "a convert" to the mixture. It is as follows (Univ. Med. Stag., Mar. '99,) chloroform, $1\frac{1}{2}$ oz., Sulphuric ether, 6 oz., Petroleum ether, $\frac{1}{2}$ oz.

MATCHES WITHOUT PHOSPHORUS.—The Belgium Government some time ago offered a large prize to the inventor of a match that contained no phosphorous and gave off no poisonous gas. Two Berlin chemists have succeeded, it is said, in discovering a mixture for a match which fulfils these conditions, and that it is as inexpensive as that for ordinary matches. If this be confirmed it will prevent a vast amount of suffering from necrosis, and many lives now destroyed in match factories.

NEUROSES FROM PIANO PRACTICE.—Dr. Wartzold (in *Jour. d' Hyg.*) blames abuse of the piano practice for the chlorosis and neuroses from which so many young girls suffer. Girls, he says, should not be compelled to hammer on the keyboard before they are fifteen. He shows that of 1,000 studying the piano before the age of twelve, 600 were affected with nervous troubles; 200 of those who commenced at a later age and only 100 among those who did not touch the piano.

UNUSUAL CASE OF CONVULSIONS.—Fischer, in Pediatrics, reports a case of a child with convulsons, occurring every fifteen or twenty minutes for over four days, with high temperature and much thirst, "beginning from an overloaded stomach." The child recovered. Local depletion by leeches seemed markedly effectual.

RABIES.—The latest theory on this disease (*St. Petersb' Med. Woch.*) is that the dog secrets a poison like snake poison, and that the disease is not infectious in the ordinary way, but poisonous like a snake bite.

A PUBLIC HEALTH SCHOOL.—A bill is before the New York legislature, and has been reported favorably on, for a State School of Public Health, where free instruction shall be given to all members of local health boards. The bill provides for a laboratory for scientific investigations, milk, water and food analysis, etc.

CANADIAN COCOA.—Canadians may not be expected to buy and use Canadian manufactured articles when they are not as good as the foreign article, but when they are as good, or better, the reverse may be fairly expected. From personal knowledge we have reason to believe that there is no better—purer, stronger, more delicate of flavor, or less expensive, cocoa manufactured anywhere than the high grade article of the "Cowan Company," of Toronto.

HYGIENIC BISCUITS, so called, said to be very digestible, etc., are imported and advertised. It is very doubtful if there are any better or more digestible made than "Christie's Sweet Wine" biscuits. They are subjected to a very high temperature in the baking, by which the starch cells are well broken up, rendering them easy of solution in the stomach; and they are nutritious, of delicate flavor, and reasonable price.

OBITUARY.

DEATH OF DR. A. C. GAVILLER.—Archibald Charles Gaviller, M.D.C.M. Fell. Trin. Med. Coll., who resided at Grand Valley, Ont., died on Jan. 7th, 1899. He was much respected and deeply regretted by a wide circle of friends who knew him to be a man of no ordinary worth in every way. He was an exceptionally well qualified medical man. He graduated in 1882 at Trinity, and took the University Gold Medal, the highest honor of the year, as well as the 1st Silver Medal of Trinity Medical College, the Second Honor of this Medical College of the same year.

In addition to this some years after graduating he took at least two Post Graduate Courses, in New York, and had just before his death qualified himself fully as a specialist in Ophthalmological and Otological work. His death was due to overwork and exposure to the excessive heat in New York when there last summer for some months. He was only 41 years old at the time of his death. He was a nephew of Dr. Geikie, Dean of Trinity Medical College, Toronto.

GONORRHEAL SEPTICEMIA AND ULCERATIVE ENDOCARDITIS.

The cardiac complications of gonorrhea are treated quite extensively in a recent contribution by Thayer and Lazear. The gonococcus has been shown to be capable of causing grave local as well as general septic complications. Cystitis, periurethral abscess, salpingitis and peritonitis, etc., have been quite clearly demonstrated to be caused by the gonococcus in a number of instances. The presence of the gonococcus in joints the seat of gonorrheal synovitis, has been demonstrated by many observers; it has also been obtained in pure culture from subcutaneous and other abscesses, from pleural effusions, and from the circulating blood (Thayer and Blumer, Thayer and Lazear). It would, therefore, not be remarkable that the gonococcus should be found as the cause of endocarditis and other inflammatory changes in connection with the heart.

Endocarditis is by far the most common of the cardiac complications of gonorrhea. Gurvich collected 110 clinical instances, in 77 of which the facts were stated clearly enough to allow of quite definite conclusions. Pericarditis seems to be much less frequent than endocarditis, Thayer and Lazear being able to find reliable records of 17 cases. They were also able to collect 32 instances of gonorrhea with fatal cardiac complications, 31 of which were instances of ulcerative endocarditis, with or without pericardial or myocardial changes, one case, that of Councilman, being an instance of peri- and myocarditis alone.

From a pathologic standpoint these cases of gonorrheal endocarditis may be considered in five classes: 1. Those instances in which the history shows the association of the process with gonorrhea, but in which there is no record of any bacteriologic examinations. 2. The cases of mixed or secondary infections, organisms other than the gonococci being obtained in pure culture, although in some cases organisms morphologically similar to gonococci were found. 3. Cases in which organisms possessing the morphologic and staining characteristics of gonococci were demonstrated to be present in the lesions, but in which cultures were not made. 4. A group of cases in which cultures made upon ordinary media remained sterile, while the microscope exaninations of the lesions showed organisms having the characteristics of gonococci. 5. The cases in which the purely gonococcal nature of the endocarditis may be considered as definitely proven by obtaining the gonococci in pure cultures, either during life or after death, and by demonstrating their presence in the lesions after death. There are only five cases recorded that may be placed in this group, in which the chain of evidence is complete. In one of these cases, viz., that of denharz, pure cultures of gonococci were obtained from the thrombi on the aortic valves, and the introduction of a piece of the softened thrombus into the human urethra gave rise to a characteristic gonorrhea, with gonococci in the discharge.

The anatomic lesions in those cases in which the purely gonococcal nature of the infection is probable or proven, corresponds to that of ulcerative endocarditis in general, with extensive polypoid fibrinous deposits,

and more or less actual destruction of the valves, often associated with the formation of valvular aneurysms and perforations.

There appears to be no particular relation between the time of the onset of the endocardial infection and the duration of the urethral involvement, some cases developing almost at once after the onset of the urethritis, others weeks or months later. Some cases occurred in the first attack of gonorrhea, others in persons who had suffered once or twice before. Arthritis preceded the cardiac complication in most of the cases, but in not a few the endocardial affection occurred without or before the articular symptoms.

The general symptoms of gonorrheal endocarditis differ in no essential from those of endocarditis of other origin. There is generally an irregularly intermittent or remittent fever, associated with severe chills, profuse sweating, marked anemia, and albuminuria. The duration of the attack, in the cases in which the purely gonococci nature of the infection seems probable, varied from ten days to six months. In Thayer and Lazear's case the septicemic symptoms persisted for six months.

It appears, then, that it is definitely established that an acute gonorrhea may be the starting point of a grave septicemia. with all its possible complications, the infections being either mixed or secondary, or purely gonococcal. During the course of this septicemia endocarditis may develop, and it may in some cases assume a rapidly fatal course, the symptoms being those of acute ulcerative endocarditis. The endocarditis of gonorrhea is not rarely due to the gonococcus alone, but may also be the result of a secondary or mixed infection.

Symptoms of Friedreich's Ataxy following Scarlet Fever.—Katz (*Deutsche Med. Wochenschrift*, No. 37, 1898) observed a case where, after scarlet fever, a girl aged 8 years developed complete paralysis of all her limbs. This gradually disappeared, but was replaced by ataxic symptoms simulating Friedreich's disease in everything but two points; one being that all the patient's sisters were healthy, and the family history was good, the other that the disease was not progressive: some of the symptoms, especially the nystagmus, having improved since its onset five years ago.

There were constant choreiform movements of one group of muscles after the other, made worse by movements, by standing or walking, but not by closing the eyes (no Romberg's sympton). The speech was nasal and "scanning," and the patellar reflexes were absent. There was no disturbance of sensation, paræsthesiæ, or pain, and the sphincters acted properly. Tabes dorsalis and chorea could be excluded with certainty. Ataxy has been observed not infrequently after acute infective diseases, but it has always been of a fugitive and purely functional character. In this case the disease had lasted for five years, and the nystagmus and loss of knee-jerks were opposed to hysteria.

THE ANTITOXIN TREATMENT OF DIPHTHERIA

There is little diversity of opinion as to the utility of the antitoxin treatment of diphtheria among those who have had the largest experience, and are thus entitled to a hearing. There is, however, not an inconsiderable body of the profession who, for one reason or another, think the subject still surrounded by doubt, and thus refrain from using a therapeutic agent whose claim to confidence has been incontestably established by the results of extensive clinical experience. To those who have not yet been convinced we commend for earnest consideration a masterly contribution to the literature of the antitoxin treatment of diphtheria by Goodall in the *British Medical Journal* for Jan. 28 and Feb. 4, 1899, in which is presented a judicial analysis of the subject in all its varied aspects.

A study of the figures shows that the case-mortality from diphtheria in London has fallen from 24.7 per cent. in 1894 to 17.4 per cent. in 1897 The reduction has, however, been much greater among the cases admitted to the hospitals of the Asylums Board than in the city at large, i. e., from 25 per cent. to 14.9 per cent., as against a reduction from 24.5 per cent. to 20.1 per cent. among cases not admitted. This difference becomes the more emphatic when it is borne in mind that the fatality of the hospital treated cases has usually been higher than that of cases not so treated. Not all of the cases of diphtheria received into the hospitals, however, were treated with antitoxin, but in 1897 this number reached 80.2 per cent. Many cases were admitted so late that no treatment could avail, and the hospital mortality is thus larger than it otherwise would be. The figures given are based upon the annual reports of the Stati-tical Committee of the Metropolitan Asylums Board. Corrected for errors in diagnosis they show a reduction in case-mortality from 30.4 per cent. in 1893 to 17.67 per cent. in 1897. In children under five years of age the reduction was proportionately even greater—from 53.3 per cent. to 24.9 per cent.

Among 3275 cases of laryngeal diphtheria seen at the Hospital Sainte Eugénie from 1854 to 1875 and at the hospitals of the Metropolitan Asylums Board, recovery occurred in 1008—33.8 per cent.; while among 745 cases from several sources not operated on recovery ensued in 335—44.9 per cent.; and among 8927 cases from numerous sources in which tracheotomy was performed, recovery took place in 2543—28.4 per cent. Since the introduction of the antitoxin treatment there were among 3486 cases of laryngeal diphtheria from various sources, 2522 recoveries—72.3 per cent.; among 1831 cases not operated on, 1471 recoveries—80.3 per cent., and among 2574 cases in which tracheotomy was performed, recoveries—63.4 percent. All of these cases were treated with theantitoxin.

That laryngeal involvement is less common in cases treated with the antitoxin is shown by the fact that during 1894 among 3042 consecutive cases of diphtheria not treated with the antitoxin in the hospitals of the Asylums Board, laryngeal symptoms developed in 116—3.8 per cent,; while in 1895 (when 61.8 per cent. of the cases were treated with the antitoxin), laryngeal symptoms developed in 18 among 2695 cases—0.67

per cent.; and in 1896 (when 66.6 per cent. of the cases were treated with the antitoxin) laryngeal symptoms developed in 16 among 3300 cases—0.4 per cent. Further, among 412 cases in which diphtheria occurred as a complication of scarlet fever during the year 1896, and laryngeal symptoms were not present when the serum was injected, the larynx was invaded in 5—1.2 per cent.; while among 236 similar cases not treated with the serum, at any rate not until after the development of croup, the larynx was invaded in 36—16.6 per cent. Besides, there have been almost no cases for three years in which laryngeal obstruction arose after admission to the Eastern Hospital, where the antitoxin is injected immediately after entrance.

Among 131 fatal cases not treated with the antitoxin in 1894, death resulted from extension of the membrane along the respiratory tract in 22—16.7 per cent.; and from bronchopneumonia in 21—16 per cent.: while among 103 fatal cases treated with the antitoxin in 1896, and among 171 treated similarly in 1897, the number of deaths resulting from extension of the membrane was 3—2.9 per cent., and 5—2.9 per cent. respectively, and from bronchopneumonia 4—3.8 per cent., and 9—5.2 per cent respectively.

Of 1580 cases of diphtheria treated with the antitoxin in 1895, 1896 and 1897, 283 developed paralysis—18.2 per cent. In cases in which the serum was employed on the first day, this complication appeared among only 5.7 per cent.; in those in which the serum was used on the second day the paralysis appeared in 10.1 per cent. Only one case of severe paralysis occurred among the patients treated with the antitoxin on the first two days, and among these there was no death due to the complication. There were only 9 such cases with 3 deaths, among those treated within the first three days. On the other hand, there were 51 severe cases with 15 deaths among those not brought under treatment until the fourth day or later. Among 483 cases of post-scarlatinal diphtheria treated during 1896 in the hospitals of the Asylums Board, with the antitoxin, 34 became paralyzed—7 per cent.—as compared with 21.3 per cent. among similar cases admitted directly from the outside, but 413 of the cases—85.5 per cent.—were treated on the first two days. Only one of the 34 cases of paralysis terminated fatality. Among 452 cases treated in the Eastern Hospital during 1894, immediately before the introduction of the antitoxin, there were 49 cases of paralysis—10.8 per cent.; 5 of these were severe and four terminated fatally. A comparsion of the cases treated in 1892, 1893 and 1894 (without the antitoxin) with those treated in 1895, 1896 and 1897 (with the antitoxin) shows that those treated early with the antitoxin were less likely to develop paralysis than those treated early without the antitoxin, and that although paralysis was more frequent in cases treated with the antitoxin, the proportion fatal from this case was not essentially different in the two sets of cases.

The influence of early treatment is shown also in the fatality, as well as in the incidence of paralysis. Thus, in 1894, when the antitoxin was not used, among 133 cases admitted on the first day of the disease, 30 died—22.5 per cent. And among 539 admitted on the second day 146 died—27 per cent.; while among 143 treated with the antitoxin on the first day 7 died—4.5 per cent.—and among 809 treated on the second day

130 died—14.9 per cent. In 1897, among 66 cases treated on the first day, 1 died—1.5 per cent.—and among 317 treated on the second day 16 died—5 per cent.

In the cases of post-scarlatinal diphtheria the mortality between 1871 and 1894 varied in the different hospitals from 42.8 per cent. to 61.9 per cent.; while since the introduction of the antitoxin the mortality has varied from 5 per cent. to 25 per cent. in 1895, and from 4 to 5 per cent. in 1896 and 1897. Even if all of the mild cases are excluded and all the fatal cases are included, the mortality for 1896 would only be 20.1 per cent., and for 1897 only 15 per cent.

Finally, among the clinical evidences of the utility of the antitoxin are the inhibition of extension of existing membrane, and of the formation of fresh, while that which is present clears off more quickly than usual; the foul discharge that attends involvement of the nares soon ceases, and breathing and swallowing are rendered easier; the enlargment of the cervical glands and the inflammation of the tissues of the neck subside; the pulse-rate and the temperature fall; appetite returns; and the patient is still convalescent; while even in the fatal cases the last moments of life are made more tolerable.

In conclusion, Goodall expresses the sentiment that "few of even the most useful" of the agents of the pharmacopeia "have been subjected to the same fierce criticism as has the antitoxin of diphtheria, and still fewer have borne the ordeal as triumphantly, and from this there can be no dissent."

The results of this analysis show, as all the statistics tend to show, that as a direct outcome of the use of the antitoxin in the treatment of diphtheria, the mortality from the disease has been greatly reduced, both in the community at large and in the hospitals; that laryngeal and bronchopneumonic complications are less common and less fatal; that paralysis is more commonly observed (perhaps because more severe cases survive) though not more fatal; that the results are the better in all respects the earlier the treatment is instituted; that the clinical course of individual cases is rendered milder and more favorable; and that the antitoxin possesses distinct immunizing power.

A further illustration of the prophylatic value of the antitoxin is afforded by the experience of Allan, who relates, in *Treatment* for January 12, how in an institution accommodating sixty children a threatened epidemic was averted by timely immunizing injections. It appears that one of the children, while visiting a friend, was exposed to infection with diphtheria, and in returning home developed the disease and transmitted it to the girls in the beds on each side of her own. These three children were removed to a hospital, and no further cases appeared until after their return several weeks later, when five children in the same dormitory were attacked, On bacteriologic examination diphtheria bacilli were found in the throats of two of the earlier patients. During the following month several other children developed the clinical symptoms of diphtheria, and several more had inflamed throats without membrane. At this time a protective dose of antitoxin was given to all the children, from now on, although diphtheria bacilli persisted in the throats, there were no more cases of diphtheria or of sore throat.

EPITOME OF CURRENT MEDICAL LITERATURE.

SURGERY.

Anterior Metatarsalgia.—Whitman, M.D., (*Med. Record*, August 6).—This affection was first described in 1876, by Dr. T. G. Morton, of Philadelphia, and is characterised by recurrent pain about the fourth metatarso-phalangeal articulation, sharp and cramp-like in character. If not checked, it extends to the other joints and to the dorsum of the foot and legs. He supposes it to be due to pinching of the external plantar nerve or its interosseous fibres, by the adjoining fourth and fifth metatarsal bone. The mobility of the fifth and its shortness allow it to roll on and under the fourth metatarsal bone; the pressure on the nerve produces a neuritis. The chief causes are rupture of the transverse ligament and tight-fitting boots. The treatment adopted was removal of the head of the fourth metatarsal bone.

The affection is relatively uncommon in hospital practice; it is more common in females than in males. Of 84 cases, 64 were in females and 20 in males; the average age in 64 cases was 33 years.

The pain is usually felt only when a boot or shoe is worn, and is more or less constant when the foot is used. Sometimes the cramp is preceded by a sensation of something slipping or moving in the foot, and in such instances a similar snap also precedes the relief of the symptoms; removal of the shoe usually relieves the pain. There is generally a weakened and depressed anterior metatarsal arch, which predisposes to pain on lateral pressure. The foot is broadened and relaxed, or may appear normal, or there may be depression of both longitudinal and anterior arch. Where no deformity exists, abnormal mobility of the fifth metatarsal bone allows it to override the fourth, causing painful pressure when a tight boot is worn. In walking, elevating the heel increases lateral pressure, especially going down hill. Dr. Whitman thinks that it is the dorsal digital nerves that are compressed rather than the plantar. The chief causes are tight boots, injury, strains, and over-exertion.

As to treatment, the boot should have a low heel, a wide, thick sole, a well-fitting arch, and abundant room for the toes, the main object being to support the anterior arch. Sometimes benefit is obtained by having the inner sole arched upwards to sustain the foot in the normal position, or a pad of sole leather is fixed by adhesive plaster behind the head of the metatarsal bone of the affected joint. A properly fitting support, which may sustain the longitudinal arch as well, is best in some cases. The foot may be strengthened by exercises. Resection is rarely required.

Traumatic Axillary Aneurysm.—Alfred Willett, F.R.C.S. (*Practitioner*, December, p. 571).—A man aged 24 was stabbed in the right armpit with a pair of scissors. There was much bleeding which was stopped by pressure. When examined a month later a small scar was seen in the anterior fold of the axilla, and the hollow was almost filled by a hard

swelling with expansile pulsation. The swelling was diminished and the pulsation arrested by compression of the subclavian artery. A loud blowing murmur was heard. The right arm was smaller than the left, flabby, and nearly helpless. The fingers were semiflexed, and could not be extended nor abducted. Supination and pronation were weak, and there was marked wrist-drop. There was a numbness and tingling and some patches of hyperæsthesia in the area supplied by the ulnar nerve. The extensor muscles of the forearm, and those supplied by the ulnar nerve, gave the reaction of degeneration. There were no trophic changes in the skin such as would have resulted a month after division of the ulnar nerve.

The diagnosis of traumatic aneurysm was obvious But of what artery—axillary, or one of its branches? As the radial pulses showed no difference, and as there was no venous obstruction, it was concluded that a branch was affected. It was doubtful whether the nerve symptoms resulted from pressure of the aneurysm or tight bandaging at the time of the injury.

The patient was placed recumbent with his arm elevated. No change was noticed until the eleventh day, when the aneurysm was harder and the pulsation barely perceptible. The aneurysm was obliterated, and the nervous symptoms had diminished at the time of the last report.

Pathology and Therapeutics of Gonorrhœal Arthritis.—Loewenhardt (*Wien. Med. Presse.* November 6, 1898, col. 1777).—Gonorrhœal arthritis is not yet admitted by all as a specific disease, some writers still maintaining that it is only the accidental occurrence of rheumatism in a sufferer from gonorrhœa. The gonococcus has however frequently been found in the affected joints, and it is probable that failures to find it in other cases may have been due to defects in the technique employed in the search. This organism is an obligatory parasite; its toxines have been isolated, and an emulsion of dead bacteria has produced suppurative arthritis experimentally. Other manifestations beside joint affections may occur in the course of the disease, such as skin eruptions, endocarditis, retinal changes, and psychical disturbances, so that instead of a local ailment gonorrhœa in some cases comes to be a general disease ("Gonococcosis," D'Aubney). It may even occasionally prove directly fatal. The arthritis is distinguished from rheumatism by the nature of the changes in the joints, being characterised by only slight destruction, followed by an exaggerated reparatory process, with formation of granulation tissue leading to fibrous ankylosis. Relapse or reinfection is very liable to cause renewed joint affection, whereas an intercurrent attack of rheumatism or exposure to wet and cold does not have this effect. From osteo-arthritis it is distinguished by the absence of changes in the bones.

No drug can lay claim to act as a specific in this disease. Relief of pain is sometimes afforded by salicylate of soda, and iodide of potassium is occasionally useful, though it often fails. The same may be said of "oleum gaultheriæ," recommended by Taylor. The writer finds that salol and sandal wood oil administered in capsules give the best result. Of mercurial treatment he has had no experience. The affected joints

should be fixed on splints to secure absolute rest, but this treatment should not be continued longer than is absolutely necessary. It is advisable to draw off the fluid from the joint if it is much distended, and even arthrotomy may be practised. Later on massage is useful, and heat, applied by means of hot air or sandbags, is appreciated by the patient. In the former Härtel's apparatus is to be preferred.

A Curious Case of Phosphorus Necrosis.—A case of phosphorus necrosis apparently due to the inhalation of phosphorus fumes is recorded in a recent issue of *l'Odontologie*. The patient was a man, of good health, but addicted to the habit of excessive cigar-smoking, consuming about 20 cigars a day and using many matches to each one, as he frequently interrupted the smoking during his work. It was computed that for the last 20 years he had daily inhaled the vapour of phosphorus given off by over 100 matches. The early symptoms were pain in the right eye, with swelling involving the whole side of the face. Suppuration supervened and the pus obtained a free flow into the oral cavity. The patient's condition grew worse and the maxilla was eventually removed. A few months later a fresh operation was necessary, but he collapsed and died from meningitis. His teeth were in a deplorable condition, so that possibly the phosphorus acted through this medium as the cause of the necrosis.—*Lancet*, Nov. 26.

The Operative Treatment of Pulmonary Cavities. — Wiener (*Münchener Med. Wochenschrift*, October 18, 1898, p. 1351) describes a case of gangrene of the left lower lobe, which he treated by pneumotomy. He turned back a flap of skin and muscles eight inches long, and after resecting ribs rather freely, came upon the pleura. As the parietal and visceral layers were adherent he was able to proceed to the pneumotomy proper at once. With the knife of a Paquelin's cautery he penetrated the lung for about two inches, when the cavity was opened. It was found to contain a large slough of pulmonary tissue as big as a fist.; this was removed and the cavity packed with iodoform gauze. Five days later another cavity was found, which communicated with the first by a narrow opening, and resembled it in also containing a large slough. This was treated in the same way. The quantity of expectoration at once diminished, and became simply purulent instead of fœtid. Six weeks later the cavity had completely closed. There was not even a sinus left, and the patient went out of hospital having gained over 30 lbs. in weight. The writer considers that such cavities should be opened freely.

The Causes of Recovery after the Accidental Division of the Thoracic Duct.—Wendel (*Deutsche Zeitschrift f. Chir.* Bd. 48. Heft. 5 u. 6, 1898) found, on looking through the material operated on by Küster, of Marburg, during the last 27 years, that the thoracic duct in the neck had been wounded accidentally no fewer than five times. This accident has lately aroused considerable attention (v. *Annals of Surgery*, June, 1898, and MEDICAL AND SURGICAL REVIEW OF REVIEWS, Vol. I., p. 61). In one of these cases chyle escaped during the operation, but never

afterwards; in the rest chylorrhœa persisted for some time. In one it lasted for five weeks, and brought the patient very near death. The chylous fistula healed in every case under careful plugging with gauze.

The writer has investigated the anatomical reasons for this frequent recovery after division of the thoracic duct. (1) Out of 17 museum specimens he found that a single duct was present in only 8; in the others there were several parallel trunks. In two of these preparations there were communicating branches with the vena asygos. (2) The writer injected the duct in 12 bodies, and found that (*a*) there were numerous lateral branches, the size of a silk thread, some of which could not be traced further than the loose tissue of the mediastinum, while others were found in close proximity to the intercostal veins and the vena azygos; (*b*) in two cases there was an obvious communication between the duct and the vena azygos; (*c*) in four cases only did the duct end singly; in the rest it had several mouths.

These anatomical facts explain why, in the majority of cases, a wound of the thoracic duct in the neck does not prevent the chyle flowing into the veins. If no collateral branches are present, a chylous fistula persists until they are formed. The best treatment is plugging the wound, taking care that the patient receives plenty of nourishment, which, if necessary, must be administered *per rectum*.

Chronic Pyæmia Caused by the Staphylococcus Albus.—Wohlgemuth (*Berliner klin Wochenschrift*, No. 36, 1898) publishes a remarkable case of chronic pyæmia. A man, aged 56 years, was operated on for hæmorrhoids, after which it was necessary to use the catheter for a few days. A very acute urethritis and cystitis followed. These were apparently cured, when an acute epididymitis appeared. The left sternoclavicular joint became red and inflamed, and a phlegmonous infiltration spreading from it over the whole of the left supraclavicular fossa required free incisions. Later, the patient suffered from a neuritis of the brachial plexus, first on the left side, then on the right, and an abscess in the gluteal muscles. The vertebral column was attacked: the fourth and fifth dorsal and the sixth cervical spinal processes became prominent, and the pains radiating down the arms unbearable. An abscess formed in the thigh and was opened. The whole course of the disease was extremely chronic, 5½ years having elapsed, up to this point, since the operation. Finally, compression-myelitis appeared, and resulted, after five days of acute symptoms, in bed sores, and in complete paralysis of both legs and of the bladder and rectum. An intradural abscess was diagnosed, depending on chronic osteo-myelitis of the vertebræ, and the spinal canal would have been trephined if the patient had not declined the operation. The acute symptoms subsided and the man was still alive seven months after the paper was written, though in the same paralysed condition. An examination of the pus from these abscesses proved that the whole disease was caused by the staphylococcus albus. Staphylococcus-osteomyelitis of the spine is a rare disease, and in the hitherto reported cases has always run an acute course, and been caused by the staphylococcus

pyogenes aureus, though in rabbits, Lexer and Colzi have each succeeded experimentally in producing spinal osteo-myelitis with the staphylococcus albus. The case is also interesting because the organisms obviously invaded the system through the urethra, while most cases of osteo-myelitis are cryptogenetic, i.e., their starting point is obscure. It is noteworthy that none of the long bones, though they are the common seat of staphylococcus osteo-myelitis, were affected in this case.

Ventricular Laryngocele.—Dr. Cohen Tervaert (*Arch. Internat. de Laryngol.*, November 2, 1898) describes a curious case of ventricular laryngocele in a man 62 years old, who was troubled with difficulty in breathing, especially on going upstairs. Almost the whole of the entrance of the larynx was covered with a bulla; the left side of the larynx was motionless, the right side had its normal mobility. On a second examination the bulla was absent, but returned on making a vocal effort, and gradually reached its full size. Some smaller bullæ also made their appearance, and it looked as if the ventricle of morgagni were enlarged. It is believed that the swelling is caused by a dilated ventricle, or by an appendix distended with air in respiration, which gets into it by a tear in the mucous membrane, the walls of the ventricle having become thin and yielding to pressure. The bulla protrudes through a hole in the wall of the ventricle, and it is proposed to remove it by means of a snare.—*Bristol Med. Jour.*

Oblique Fracture of the Patella.—Kofmann (*Deutsch. Med. Woch*, No. 43, p. 685.)—Fracture of the patella is a common accident, but is almost always either horizontal or stellate. Dr. Koffman reports the case of a workman who was struck by a steam hammer near the knee, and had the patella fractured into an outer large and an inner small fragment, the line of fracture running first vertically from below upward, and then bending somewhat inwards. The knee joint was filled with blood, and there was a præpatellar hæmatoma: the anterior layer of periosteum over the patella was apparently not torn through. The patient could walk but suffered considerable pain in doing so. Rest and an ice bag with subsequent massage was the treatment adopted. Two cases of this accident are reported by Baker in his monograph on *Fracture of the Patella*; and another case, apparently similar to that of Dr. Kofmann, is recorded by Tresonet (*Gaz. des Hôpit.*, No. 12, 1881, quoted in Virchow's *Archiv.*, 188, S. 335, II.). In this last case the patient only became aware of the fracture three weeks after the accident, and did not come for treatment till ten weeks had elapsed, during which time he kept about as usual.

The Opening of Abscesses from Appendicitis into the Bladder.—D. Vladoff (*Thèse de Lyon*, 1898, *Abst. Lyon Médical*, Nov. 28, p. 351) could find only fifteen cases recorded of this rare occurrence. Excepting cases where the phlegmon is hypogastric, and involves the space of Retzius, when there are signs of pericystitis, this termination is relatively favourable. Ten cases ended in cure with spontaneous closure of the vesical communication. But whether the cure was permanent cannot be said.

The remaining five died, two from peritonitis, one from phthisis, one after operation for removal of the appendix, and one from severe hæmaturia. Cystitis never ensued, frequency of and pain in micturition when present were due to pericystitis.

The treatment depends upon the period of the disease. In the beginning the inflammatory swelling should be incised. Vesical irritation shows danger of perforation. If perforation has occured, according to M. Poncet, in the absence of complications, the natural termination in cicatrization should be awaited. The bladder should be disinfected by douching. Later, if there is a relapse of appendicitis, the appendix should be removed.

Hereditary Cerebellar Ataxy. — Classen (*Centralblatt f. innere Med.*, December 3, 1898) describes a hereditary, or rather family form of cerebellar ataxy, occurring in three male cousins, whose family history is well-known to him. The disease is popularly known in the neighbourhood as "flying gout." There is deficient muscular co-ordination, which leads to movements very like those of disseminated sclerosis, but in which the spastic element is wanting Thus the gait is that of a drunken man, and there is no dragging of the feet. The tremors of the hands and arms resemble those of disseminated sclerosis in becoming worse when these are used, but differ from them in never completely ceasing when they are resting. In the most marked case it was impossible for the man to sit still a moment, even the trunk swaying backwards and forwards. Romberg's symptom is absent, and the patellar reflexes are marked. This distinguishes cerebellar ataxy from Friedreich's disease. Nystagmus may be present, but in the most marked case it was absent. The muscles of expression are usually involved so that the patient constantly makes grimaces, or appears to be in a state of perpetual surprise. Articulation is indistinct; the speech is not deliberate and "scanning" as in disseminated sclerosis, but the words after being mouthed are, as it were, shot out.

The disease always began after middle age; in these men, who were all persons of feeble intellect, at 54, 55, and 65 respectively. It is doubtless closely releted to Huntington's chorea, which likewise is hereditary and begins late in life, but as far as is known the anatomical changes in the latter disease are to be looked for in the cortex of the cerebral hemispheres. Paul Londe, who has collected the scattered literature on the subject of cerebellar ataxy, describes a preataxic neurasthenic stage, and slight scoliosis as an almost constant symptom. Out of Classin's three cases there was kyphosis in one, scoliosis in another, and a normal spine in the third.

Anatomically the nervous symptoms appear to depend on a diffuse atrophy (not degeneration) of the cerebellum and cerebellar nerve tracts.

The writer has been able to construct a very complete genealogical tree of the family, and to trace the disease back to the grandmother of the oldest members now living, among whom are numbered the three ataxic cousins. One of her sons committed suicide, and the other

children, one son and three daughters, all suffered from "flying gout" after 50. It disappeared in the next generation, but was replaced by other anomalies, such as mental weakness, stuttering and scoliosis, the latter being usually combined with kyphosis. Further, two brothers of the originally affected grandmother gave rise to families in which idiocy and imbecility (affections of the hemispheres) predominated. One of their male grandchildren, who was otherwise healthy and intelligent, had choreic movements of the head and nystagmus. In all the families females were in the majority, though the ataxy mostly affected the males. The etiology of these nervous diseases is completely obscure.

The Nervous System in Scleroderma.—In the December number of the *Glasgow Medical Journal*, Dr. Lindsay Stevens publishes a lecture on a very important case of scleroderma, in which there was pronounced hemiatrophy of the face, body and extremities. A full clinical account of the case was published in the *International Clinics* in 1897. On re-admission to hospital in the spring of 1898 the skin on the affected side was breaking down and ulcerated, and there were symptoms of an ovarian tumour. Laparotomy was performed for the removal of this tumour, but unfortunately she succumbed on the third day after operation. There was a complete absence of pericardium, and there were cicatrices in the spleen and mixed parenchymatous and interstitial nephritis. The cortical matter of the hemisphere opposite to the atrophic side was, perhaps, a little thinner, but no microscopic examination is recorded. In the spinal cord, however, the grey matter of the right (the affected side) anterior horn was diminished, the ganglion cells were smaller and less numerous, and their nuclei and plasma granules were not so well defined as in the corresponding cells of the opposite side. The neuroglia also in the right horn seemed denser than in the left. Corresponding changes could not be made out in the medulla or pons. Throughout the cord, medulla, and pons the arteries, especially of the grey matter, were surrounded by spaces, either empty or containing a structureless homogeneous material, and most of these spaces had well-defined margins. The nerve fibres from the cervical and lumbar plexuses showed a well-marked parenchymatous degeneration. The skin showed absence of fat, thickening of the horny layer and atrophy of the papillæ. Between the papillæ and the muscles there was a thick layer of dense connective tissue. Dr. Stevens regards the atrophy of the anterior horn, the changes in the cells there, and the cavities around the vessels, as of much importance. He looks upon the condition as the result of these changes—*i.e.*, as a trophoneurosis of central origin. The neuritis he regards as secondary and recent. The case is of much interest, and its importance is enhanced by the long time —12 years—during which the patient had been under observation. We should doubt, however, whether Dr. Lindsay Steven's explanation of the relation of the changes in the skin to those in the central nervous system will be quite satisfactory to everyone, and we should have thought it would hardly be necessary to invoke some recent parenchymatous neuritis to account for changes in the peripheral nerves. The spinal lesions would account for them.—*Lancet*, January 7.

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NOTES.

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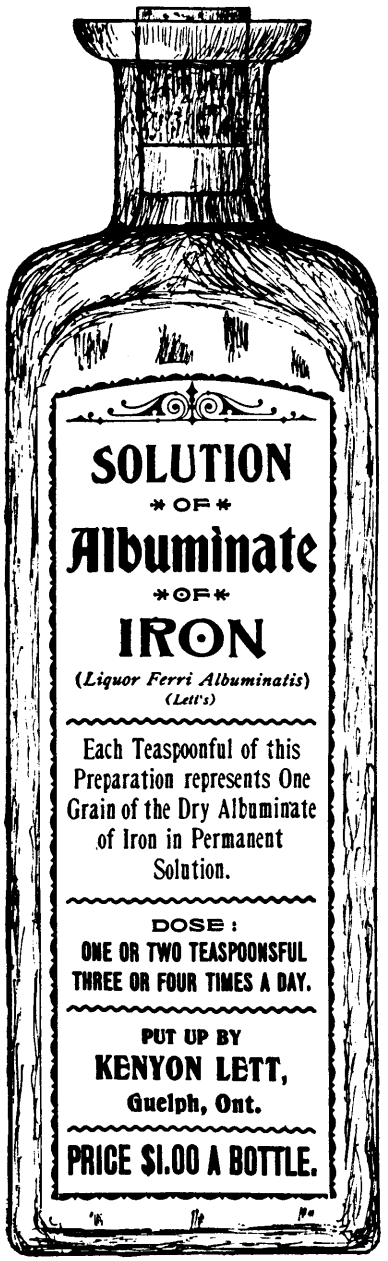

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