domain of the psychiatrist and physician but the elementary facts concerning such conditions should be matters of common knowledge. Every teacher should know something of mental defects, psychopathic states, neuroses and psychoses, and be able to read danger signs in the reactions of the children under her charge. The general causes of the various forms of mental defect and disease should be taught along with the causes of physical disease.

THE AIM IN TEACHING MENTAL HYGIENE.

The ultimate aim in introducing mental hygiene in the schools is to promote the mental health of each pupil. This cannot be accomplished all at once but it is the goal toward which effort should be directed. The social gains that would result from such an achievement are beyond computation. Pauperism, insanity, and crime would be greatly lessened, and the life of all would become more efficient and more harmonious.

TREATMENT OF PRURITUS ANI BY IONIC MEDICATION. PRELIMINARY REPORT.

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[From the Rectal Clinic, Boston Dispensary.]

PRURITUS ANI is one of the commonest conditions seen by the rectal surgeon and one of the most rebellious to treatment.

Volumes have been written on its etiology and about every disease in the category has been mentioned as a direct or contributing cause.

The research work of Murray¹ is a valuable contribution to the etiology of this disease and his conclusion that the condition is one dependent on the infection of the perianal skin by the streptococcus fecalis, simplifies, to a great extent, the problem of treatment.

Until Murray's discovery of the cause of this disease, the treatment may be said to have been palliative. In a series of 181 cases examined bacteriologically by him, the streptococcus fecalis was found to be the common organism present in 168. In the remaining 13 cases, the infecting germ was not found because too few cultures were taken, and it is fair to assume that more extended examination might have resulted in a different finding.

In 113 of the 181 cases, Murray used an auto-genous antistreptococcic vaccine which yielded good results in 99 of them.

Mummery² has described a local treatment for pruritus ani which employs electricity to drive an alcoholic solution of iodine into the tissues by cataphoresis. Since it is a fact that alcoholic solutions are not electrolytes, I fail to see how any benefit could be derived from such a procedure unless it be one due to the local action of the iodine on the superficial layers of the skin.

Other methods of treatment comprise the use of radium and exposure to the roentgen rays which are not altogether devoid of danger, as burns and sloughing of the skin have occurred, with no beneficial effect on the pruritus.

The surgical treatment of this condition involves a complete division of the sensory nerves of the affected parts; but in the light of our present day knowledge of the cause of this disease, recurrences are explainable.

Jones³ defines ionic medication as a method of treatment in which electric currents are used for their power of setting the constituents of a solution in orderly motion in a definite direction. The current is able to convey the ions of an antiseptic chemical into the skin so that the ions are brought into direct contact with intracellular organisms lurking beneath the surface and out of reach of antiseptic lotions and ointments.

The substance introduced as ions by an electric current remain much longer in the tissues than when injected hypodermically. In the latter case, they occupy the interstices of the connective tissue and are quickly carried off in the lymph stream, whereas, when introduced electrically, they enter the actual cells of the tissues and are only slowly eliminated.

Ionization depends entirely on an electrolytic process involving the dissociation of the molecules of a metal or its salts, and must therefore not be confused with cataphoresis, which is based on the laws governing osmosis, electrolysis playing no part. It is well known that the ions liberated by an electrolytic action on many metallic salts, notably zinc, copper, and iodine, are of proven antiseptic value and can be made to serve a useful purpose in the treatment of infective conditions, when introduced by direct electric current of the proper voltage.

Leduc⁴ states, "trusting to clinical evidence,

it can be said that antiseptic ions can be driven in to a sufficient depth to make them valuable in combating infective conditions."

In the treatment of pruritus ani and the perianal skin can be sterilized, and the application of the electrodes is not only painless but is entirely devoid of danger of producing burns or destruction of tissue.

No bacteriological examination of the skin was made in any of the cases in this series, but the beneficial results obtained would indicate that the infecting organisms were destroyed by the ionic applications, because it is very unlikely that the condition of the skin would improve without such action taking place. In a later and more complete report this phase of the subject will be considered.

The writer has been using ionic medication at the rectal clinic of the Boston Dispensary and also in private work for non-malignant ulceration of the rectum, anal fissures, cryptitis and pruritis, and it is on the latter condition that this preliminary report is based.

It is now about six months since this method of treatment was commenced, and while this is hardly a long enough period of time to enable one to draw definite conclusions as to the permanency of the results obtained, still it is sufficient to indicate that this method is a valuable one in the treatment of this distressing condition.

It has entirely supplanted the usual method of treating this disease by the use of anti-pruritic and cauterizing applications, stock vaccines, etc.

This series of pruritus cases numbers 30, in which are included 4 involving the scrotum. There were 2 cases of pruritus vulvae which are not to be counted as belonging to this group because they have only recently come under observation and have received but a few treatments. However, they both show satisfactory progress. It should be said that this series of pruritus cases is a selected one in the sense that none were subjected to this treatment which showed such complicating lesions as hemorrhoids, fissures, fistula, eczema marginatum, etc., which might be thought to have a possible contributing effect. The duration of the disease in these cases was from eight months to thirty-five years and all presented the characteristic skin changes in varying degree.

The results of this treatment have been very encouraging, not only from the fact that the

itching has been relieved after the first application but what is still more important, the condition of the skin immediately began to improve. In six cases in which the skin was thickened, dry, and fissured, a return to normal appearance was noted after twelve or fifteen treatments given twice a week. As the condition of the skin improved, the itching diminished and in the six cases above cited, over three months have elapsed since the disappearance of the pruritus.

It was observed that after each treatment, there was a great diminution of the itching, amounting in some cases to a practical cessation, which lasted for about two days. Upon its recurrence it was less intense and more controllable, not requiring as much digging and tearing at the parts as before. In 12 cases the skin showed very marked improvement, coincident with a great lessening of pruritus, so much so that the patients reported an ability to sleep. The remaining cases are making satisfactory progress.

Murray found the opsonic index low for streptococcus in all cases of pruritus ani and states that in his experience no treatment which does not raise the phagocytic power of the blood against the infecting organism can have any lasting benefit. He further says that it is not known whether the infection occurs because the opsonins for streptococci are low or whether the opsonins are lowered because of the invading organisms.

The experience derived from the observation of this series of cases, in which improvement followed the destruction of the organisms *in situ*, would seem to point to the latter theory as the more probable one.

In particularly refractory cases, it would appear to be logical to combine the autogenous vaccine treatment with ionic medication, thus attacking the disease from within and from without.

During the treatment of these cases, no anti-pruritic ointment or washes of any kind were employed, but strict cleanliness of the parts was insisted on. Patients were instructed to wash the parts with hot water and soap after each defecation and always before retiring. This is a most important consideration in the treatment of this disease as it tends to prevent re-infection. In cases where the skin was moist and macerated, a simple talcum dusting powder was ordered.

The electrical apparatus* used in the treatment of these cases was designed primarily for the use of the dental profession but the writer found it well adapted for use in the treatment of certain rectal diseases, by the substitution of suitable electrodes.

Briefly described, the apparatus consists of a portable motor transformer for use with direct current, the function of which is to cut down the ordinary lighting current voltage of 220-110 to 40, which has been found to be the proper voltage for use in ionization work. In connection with this is a small milliammeter with a reading of from 0-10 milliamperes which enables the operator to control accurately the amount of current that is being used.

Two electrodes are necessary, one a large plate of lead or brass about 18 cm. square covered with a layer of felt about 1 cm. thick. This is the negative or indifferent electrode.

The active electrode which is applied to the affected part in pruritus ani is made from a circular piece of sheet zinc or aluminum 6 cm. in diameter and bent in such manner as to fit into the fold between the nates. In the handle, which is attached to the centre of this plate, is a binding screw for the connection of the conducting cord. This electrode must also be covered with a layer of felt and is adapted for use with iodine or zinc solutions.

The success of ionic applications depends so much upon large currents acting for a long period of time that great care is needed to adapt the electrodes carefully to the surfaces under treatment in order to avoid irregular penetration. The larger the electrodes the more current can be employed with less discomfort to the patient.

The negative and positive terminals of this instrument are marked and the connecting cords are of different colors, so that it is an easy matter to identify them at a glance. This is an important feature for the reason that in using zinc solutions, for instance, it is necessary to apply the same with the positive pole, whereas, with the use of iodine, which is repelled or driven off from the negative pole, or in other words, electro-negative, the electrode must be connected with the negative pole.

METHOD OF USE.

The writer used two solutions in the treatment of pruritus ani; a 2% solution of zinc

chloride in distilled water and Lugol's solution of iodine.

The patient is placed in the right Sims position with legs well drawn up. The large felt covered electrode, wet with a 3% solution of sodium chloride, is slipped under the right buttock and connected with either the positive or negative wire, depending on whether a zinc or iodine solution is to be used.

It is important to place the active electrode in position before allowing the current to flow through the milliammeter, and also equally important to return the needle of the meter to 0 before removing the electrode for any purpose. By observing this precaution, the patient will not experience any unpleasant sensation.

Cases showing a moist, macerated condition of the skin are treated for the first two or three times by the application of the active electrode well saturated with 2% zinc solution and connected with the positive or red cord. This preliminary treatment has a stimulating effect on the skin, which becomes somewhat less moist and presents a more healthy appearance. After two or three applications, which should last from 15 to 20 minutes, Lugol's solution of iodine is used, diluted with 4 parts of distilled water. This is applied with the negative pole and continued in subsequent treatments in gradually increasing strength as the skin becomes more and more tolerant until such time as the undiluted solution can be employed.

As iodine ions penetrate deeper and at a faster rate than the zinc ions, the time of application can be reduced to about one-half that of the zinc solution. It is well to begin treatments with a mild current of perhaps 2 or 3 milliamperes, gradually increasing the amount until the patient begins to complain of a warm sensation. There is no need of causing pain and the amperage should be kept below the painful or so called irritation point.

Cases presenting a dry, thickened, parchment-like condition of the skin are treated from the beginning with diluted iodine solution, the strength of which is gradually increased in the manner already stated.

The applications should be given at least twice weekly and three times would be better unless the skin shows signs of irritation, which is to be avoided if possible, either by prolonging the interval between treatments or using the solutions in much more diluted form.

* The Ritter Dental Mfg. Co., Rochester, N. Y.

The number of applications necessary varies with the chronicity of the case, the long standing one requiring more. It is well to continue the treatments for two or three weeks after the disappearance of the pruritus but once or twice a week will be sufficient.

As stated above, the length of time that this method of treating pruritus ani has been in use is not of sufficient duration to warrant the belief that a permanent cure has been found, but the writer is confident that this method is of great value.

In comparison with other treatments, it has the advantage of being simple and easy of application, of doing away with the use of ointments, washes and cauterizing applications, and of perfect safety.

The writer has submitted this brief report hoping that others may become interested to pursue the investigation of the ionic method of treating this most distressing condition.

I wish to express my thanks to Dr. T. Chittenden Hill of Boston, for kindly referring to me all cases of pruritus ani in the Boston Dispensary, for treatment by this method.

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SOUVENIRS OF A MEDICAL STUDENT'S LIFE IN PARIS A LONG WHILE AGO.

BY BEVERLEY ROBINSON, M.D., NEW YORK.

IN reading Dr. Holmes' address reprinted in a recent issue of the JOURNAL, it brought to my mind many incidents of my life in Paris over fifty years ago. Velpeau, Andral, Cruveilhier, Dupuytren were by-words at that time of the past, but Ricord and Trousseau were still on deck. Trousseau's lectures at the Charity Hospital were models of grace of delivery and the art of medicine. His presence was refined, dignified and noble. He had his detractors, as he had his admirers. He was said by the former to be disingenuous. Grisolle in this respect was his antitype. Everything he said, or wrote, was relied upon as being absolute truth. He was not brilliant, but he was safe and sure. His work on Practice of Medi-

cine was the guiding hand of all students of medicine, much as Osler's is today with us.

My first year of medicine I served as stagiaire at the Pitié Hospital under the eye of Père Gosselin. Gosselin was a small rubicund man, passed middle age, absolutely reliable and honest, safe in every way. Not brilliant, but sure. As a surgeon he was what Grisolle was as physician. The only book of surgery used in those days by students was one of Follin—only completed after many years. One, as a rule, referred to special articles in the Dictionary of Medicine and Surgery for the best monographs on surgical subjects. Otherwise, reliance was essentially placed upon second rate surgical treatises whose names I fail now to recall. The two most renowned surgeons of those days in Paris were Nélaton at the Charity Hospital and Maisonneuve at the Hôtel Dieu. The former was refined, courteous, and admired by all. He was consulted by the highest and best from all parts of Europe. He used but two surgical dressings,—alcohol and spirit of camphor, diluted, or not. Maisonneuve was rough, at times almost brutal, but full of talent and originality. He never amputated cancer of the breast. He simply surrounded it with arrows of chloride of zinc paste and allowed the breast to slough off, with great incidental suffering to the patient; but opium was freely used in those days, hence the suffering was much mitigated; otherwise, it would have been unbearable. After amputations, he made a vacuum at the raw surface and covered it with many thicknesses of cotton wool. He claimed remarkable results. In those days there was no end to suppurative wounds. Some pus was called laudable; other pus of bad alloy. As to abdominal surgery there was none, or if there was, death was almost sure to follow. There were no prostatic operations and cystitis at times gave agony beyond thought, only in small degree relieved by opiates.

I served at the Hôtel Dieu, the old hospital, as externe of Behier, who had as chief of clinic the famous Bouchard. Bouchard had just come from the Salpêtrière where he served under Charcot. There he discovered that cerebral hemorrhage was caused, primarily, by aneurysms of arteries of the brain. Bouchard was an eminent scientist then and later; Behier was an admirable clinician. He was lively, whole-souled, beloved and followed by many devoted and admiring students. Bouchard was cold,