V. Mering investigates the proximate causes of the hæmatoporphyrinuria which has obtained in some cases of trional poisoning, but this is outside the scope of our retrospect.

In conclusion, trional has the advantage over sulphonal of smaller dosage, of more rapid action, and more rapid disappearance of the effect, *i.e.*, the organism comes more speedily under the drug, and is more speedily released from it.

AMERICAN RETROSPECT.

By C. Hubert Bond, M.D., B.Sc.

Epilepsy and other Convulsive Diseases: A Study in Neuro-dynamics and Pathogenesis.—Under this title Dr. Langdon, of Cincinnati, reviews (*Journ. Nerv. and Mental Disease*, September, 1896) the present state of our knowledge upon certain facts in the anatomy and physiology of the central nervous system; and puts forward some propositions to serve as a working hypothesis to explain epilepsy and other convulsive disorders in the light of modern histological research. He lays particular stress upon Cajal's demonstration of the *individuality of the neuron* as opposed to the older views. Though anatomically distinct units, neurons are in physiological relation with each other, by means of delicate projections termed gemmules or "contact granules." The neuron-body (or nerve-cell) is to be considered, in his opinion, as mainly trophic in function; while the nervous activities themselves are to be looked for in the neuron processes, and accounted for upon the theory of inter-molecular and inter-atomic motion—this motion being the result of external stimuli acting upon the peripheral arborisations of neurons. In opposition to the many theories that have been advanced in the explanation and location of the epileptic convulsion, it is now almost universally conceded that: (1) the actual origin of the epileptic convulsion is in the cortex cerebri, and (2) that its nature is an "explosive discharge" in "unstable nerve tissue." While the nerve-cell was considered the sole seat of all nervous activity, naturally the cause of convulsive phenomena was principally sought for within this nerve-cell. But Langdon quotes researches which show that the ultimate fibrillæ of the axis-cylinder may be traced *through* the neuron-body to finally ramify in "neuro-plexuses" composed of multitudinous interlacing "end-tufts," with their contact-buds, and it is in this jungle that, in his opinion, any demonstrable lesions of the various convulsive disorders (including chorea, hysteria, and even uræmia) are to be sought. He is further of opinion that the cerebral cortex, instead of being a "centre of action," has for its main function that of *inhibition*, in other words, that it is a centre for preventing, checking, directing and combining various activities which might otherwise occur in different order or intensity. The phenomena observed in the case of Goltz' dog, which lived for eighteen months after having been deprived of its

cerebral hemispheres, are cited in confirmation of this view. His propositions are summarised as follows:—(1) That epilepsy, the choreas, and probably most convulsive disorders, are the dynamical expression of an *inhibitory insufficiency;* not indications of an over production of nerve-energy, nor "explosions" due to a "molecular instability," *per se.* (2) That the cause of this inhibitory insufficiency is to be sought for in the end-brushes of collateral processes of various cortical neurons, the situation varying with the type of the disease, whether sensory, psychic, or motor. (3) That the defect consists most probably in a *structural incompleteness* (small capacity, defective insulation, imperfect contact) or a *numerical* deficiency, or both, in the collateral processes of the neurons. (4) Defective collaterals may favour occurrence of convulsions in two ways: (*a*) by impairing connection with other neurons (inhibitory, storage?); (*b*) by increased "resistance" to overflow currents, causing temporary over-charging of motor axis-cylinders.

This he terms the "collateral theory." Upon this line of argument cases of epilepsy would be arranged under three heads—(i.) *Primary* or *developmental* type, including the "idiopathic" cases under twenty years of age. (ii.) The *accidental* forms (due to trauma, syphilis, and other toxines, &c.). (iii.) The *degenerative* type, to which belong rare cases in adult life and old age (not "accidental").

Surgical Interference in Epilepsy.—Three papers bearing upon this subject appear in the last October number of the *Journal of Nervous and Mental Disease.*

The first is by Drs. B. Sachs and A. G. Gerster, and embraces a critical study, over a period of six years, of cases of epilepsy where operative procedures have been resorted to. The writers include traumatic cases and those associated with infantile cerebral palsies or some other acute cerebral condition, but not cases due to new growths. In forming conclusions as to the value of surgical interference in epilepsy, they deprecate the too early reporting of cases and the lack of adequate analysis of them. Often, if properly searched for, a history of alcoholic intemperance or some such other factor would be found, which would sufficiently explain the apparent failures. On the other hand cases in which the attacks return soon after the operation should not be excluded, as sometimes improvement sets in later on. In their opinion, results should not be considered until one or even three years have elapsed since the operation. Their conclusions are that:—Surgical interference is advisable when not more than one or at the most two years have elapsed since the traumatism or commencement of the disease causing the epilepsy. However, where a depression or other injury to the skull exists, an operation is justified even after a number of years. Simple trephining may be sufficient in certain cases, especially where there is an injury to the skull or where a cystic condition exists as the cause. Excision of cortical

tissue is advisable if the epilepsy is of short duration, and if there are indications of a special focus of disease; and excision should be practised even if the tissue appears normal to the naked eye, on account of possible microscopic lesions. Surgical interference in the case of epilepsy associated with infantile cerebral palsies is justified, especially if the interval since the beginning of the palsy is not too long. But in all cases of epilepsy, where in all probability a widespread degeneration of the association fibres exists, every surgical procedure is absolutely useless.

Dr. Collins, of New York, reports upon the microscopic changes found in portions of the cerebral cortex obtained from two cases of epilepsy, where surgical interference was resorted to. The fits in the one case were preceded by twitchings of the right thumb and index finger. Accordingly the cortical area for the right hand was removed. In it evidences of meningo-encephalitis were found, mostly chronic, but partly acute—the latter probably explained by the operation having been performed in two stages; the blood-vessels of the pia and cortex showed much obliteration associated with the formation of new capillaries. Chronic degenerative changes in the ganglion cells with slight but distinct neuroglia hyperplasia were to be seen, also patches of neuroglia tissue at the junction of gray and white matter, replacing softenings caused by the occlusion of the vessels. This patient at the time of writing, a year after the excision, had since remained quite free from epileptic manifestations. The second case had suffered for six years with convulsive affections of the left leg, which she described as cramp; these later became associated with typical "haut mal" attacks. The corresponding cortical area was excised, from which sections for the microscope were subsequently made. These revealed numerous scattered hæmorrhages, especially in the deeper layers, and a paucity of large pyramidal cells, very few of which were healthy.

Dr. N. E. Brill reviews the "*Status of Operative Procedure as a Remedial Agent for Epilepsy*." His attitude is one of pessimism. Cerebral pathology, he affirms, has not kept pace with its nosology; and, while our accuracy in diagnosing the site of a cerebral lesion is often very great, our ability to prophesy its nature is much less. He strongly deprecates the tendency to minimise the dangers attendant on craniotomies and the feeling that, under suitable precautions, the brain may be incised and explored with impunity. He maintains that surgical interference should never even be suggested, except an absolute diagnosis as to the cause and nature of the epilepsy can be determined, and that we are not at all justified in exploring, on the off-chance that should the pathological condition not be relieved or even revealed, the operation itself may possibly be followed by improvement in the epilepsy. In the present state of our knowledge, the only justification, in his opinion, for operating upon cases of so-called idiopathic epilepsy, is that death is certainly a release to these unfortunates, and that should it occur

prematurely, a neuropathic and pathological progeny is avoided—an argument that civilised nations will not recognise.

Epilepsy and its Treatment.—Under this text, Dr. Percy Bryant (*State Hospitals Bulletin*, Oct., 1896) enunciates a method of treating epilepsy which, while at first sight extreme and severe, and almost a return to obsolete practices, is really based upon the writer's belief in the toxic origin of epilepsy. In this connection, he excludes all traumatic and reflex examples of epilepsy, and refers only to idiopathic epilepsy with or without psychical phenomena. He alludes to the repeated failures to find a morbid anatomy for epilepsy in the nervous system, and believes that what facts we do know concerning the cause of convulsive seizures, as illustrated by uræmia, etc., point rather to a toxæmic origin than to any pathological change in the brain or spinal cord. He cites, again, the convulsions of children, so frequently accompanying the onset of acute infectious diseases, as an example of the effect of a toxic substance upon a susceptible though healthy nervous system. As far back as 1854 a toxic origin of epilepsy was advocated, and, in the light of our present knowledge, Bryant believes it is as tangible and tenable as the prevailing theory that the brain is the seat of disease. While admitting that the tendency to the epileptic condition may rest primarily upon some peculiar instability or susceptibility of the nervous system, acquired or inherited, he does not accept the view that epilepsy is actually inherited to the extent so many would affirm. Statistics in this direction, he says, put forth other diseases, such as catalepsy, hysteria, insanity, etc., occurring in the relatives of the epileptic, as evidence of hereditary influence; this in his opinion is unwarranted. Our observations, he says, have hitherto been too narrow, and especially has there been a failure to recognise symptoms of disturbance of the digestive functions, upon which he believes the disturbed mental condition depends. Convulsions may or may not precede or follow these symptoms, but disturbance of the mental function is inevitable and the attack continuous until the exciting cause is removed, namely, *acute intestinal toxæmia*. As regards epilepsy without psychical phenomena, where, save for a certain degree of dementia, there appears not to be the slightest manifestation indicating disease of the brain, he would attribute the convulsive seizures to the action of toxic substances accumulating in the system, and at intervals exerting an irritative effect upon the brain. The writer then proceeds to give an account of the method of treating epilepsy, adopted, with considerable success, during the last five years at the Buffalo State Hospital. The administration of bromides has been abandoned as unnecessarily severe, and as useless in that their good effect is merely temporary; in fact, he goes so far as to say that their exhibition really adds another condition, which has to be contended with, namely that, added to the epilepsy which has not been cured, there is now

bromism, developed as a result of treating the former disease. His treatment, then, briefly, is a combination of a milk diet with suitable exercise and the immediate relief of any symptoms of constipation by cathartics and enemata. A patient suffering from the psychical manifestations of the disease is purged and has all nourishment entirely withdrawn for a sufficient length of time to give the requisite rest to the digestive organs, nothing but water being meanwhile allowed. At the end of two days abnormal hunger disappears. After three or four days of this abstinence—even eight or ten days, in the case of violent mania or *status epilepticus* —a small quantity of milk is allowed; this is gradually increased from one to six glasses between morning and evening and persisted in for several weeks, if not months. The condition of the digestive organs is to be the guide, and not the physical condition of the patient. After two to four months a gradual return to the regular diet is permitted; but an immediate resort to the above is to be had on the reappearance of any symptoms of toxæmia. Drugs aiming at intestinal antisepsis, however theoretically indicated, are in practice found to be able to exert but feeble antiseptic powers. Chronic idiopathic epilepsy is incurable, and, at the best, only amelioration of the symptoms can be hoped for. It is only during the *early* stages of the disease that substantial results from treatment can be expected.

Pitting about the Hair-cups.—A Trophic Change of the Skin. —Some interesting facts are recorded (*Journ. Nerv. and Ment. Disease*, Sept., 1896), by Dr. W. Browning, of Brooklyn, concerning an affection of the skin, which he has noticed in certain nervous disorders of central origin. He has been unable as yet to obtain any areas of skin, so affected, for microscopical examination; hence the explanation of the phenomenon is as yet only speculative, and the term "hair-cups" has been used in order that the question, as to whether the pitting is about the hair follicle or actually involves it, may not be prejudged. The change is so limited, he states, that it is easily overlooked, but when once seen is easily recognised. It is more common, and the pits are larger and deeper, upon the lower extremities, especially on the front and outer side of the leg a little below the knee, and again upon the front of the thigh. It is always over muscular areas. The pits, when present, are invariably found about an existing hair or hair-bulb. The term "pitting" only partially describes the appearance, as there is an areola-like faint depression about the exit of each hair; the depression is a trifle paler in tint than the surrounding skin, rather like a minute cicatrix, but perfectly soft to the touch. The actual size of an individual pit may reach 0·5 mm. in diameter. In a typical region, no hair-exit escapes; and, while the hairs themselves do not tend specially to fall out, they do not look quite healthy under the microscope. The diseases in which the condition occurs are best typified by progressive muscular atrophy; and the writer

states that apparently, when recognised, it suffices to indicate trouble in the spinal cord (particularly in the anterior horns), and hence is of value in differentiating central from peripheral disease. He specifies nine conditions in which the pitting seems never to be observed, among which are multiple neuritis, spastic spinal paralysis, tabes, pseudo-hypertrophic paralysis, and health.

The *Post-Graduate* last year made a new departure, devoting one number to one department of the Post-Graduate School. The July number was given up to Neurological Reports, and contains several able and interesting articles, among which may be mentioned "*A Method of Relieving Tic-Douloureux.*" Dr. Dana points out the hitherto unsatisfactory and disappointing results of therapeutics applied to this disease, and the often only temporary relief afforded by surgery. He believes it is specially associated with the degenerative period of life, and often shows itself at the commencement of this period. Briefly, his method includes three stages: (1) The hypodermic injection of massive doses of strychnia. (2) The administration of iodide of potassium and tonics, especially large doses of tincture of iron; and (3) rest in bed, with light diet and diuretics. The course may have to be repeated a second or third time. The strychnia is given hypodermically in single daily doses of gr. $\frac{1}{30}$, gradually increased till at the end of fifteen or twenty days the patient is receiving $\frac{1}{6}$ to $\frac{1}{4}$ grain. Association of the pain with spasm ("motor-tic") does not contraindicate strychnia. The maximum dose is continued for about a week, and then during the following five weeks is gradually reduced. Potassium iodide and tincture of iron are given in increasing doses up to gr. xx. and ℥xxx. respectively, thrice daily. A rest in bed for four weeks is strongly insisted upon; this may be at home, provided an entire freedom from domestic and business anxieties can be ensured. The air should be moderately humid, and the temperature kept evenly at 68° F. He may resume his ordinary avocations at the end of six weeks; during the last two weeks a daily outing of two hours having been allowed. Dr. Dana also reports success in the treatment of "*Alcoholic Craving*" and the "*Opium Habit*" by the injection of strychnia thrice daily, gr. $\frac{1}{15}$ of the nitrate being combined with gr. $\frac{1}{300}$ of sulphate of atropine. The patient is made to understand he is taking a "cure." Patients convalescent from acute alcoholism are allowed to remain in hospital two days longer, during which they are injected thrice daily, and at the same time take a stomachic of cinchona, capsicum, and iron wine, &c. On discharge they are given a tonic, and told to report weekly, then monthly. Many patients are thus imbued with confidence, hope in the future, and a staff upon which to lean in their weakness. The morphia habit requires a much longer application of the treatment.

The same writer also contributes a paper, entitled "*A Method of Examining the Insane,*" embracing a specific plan of the way in

which a complete psychological examination of a supposed insane patient may be made, and of the kind of record which should be kept when this sort of examination is wanted; while Dr. G. R. Elliott details "Notes on Laboratory Methods," in which the *technique* of some of the more modern and useful methods of examining the nervous system is put forth.

Dr. Joseph Collins presents the results of an enquiry into "*The Influence of Anti-Syphilitic Treatment in Preventing Certain Diseases of the Nervous System Considered of Syphilitic Origin.*" Reference is made to the much disputed question as to the curability of syphilis; those who believe in it would explain the occurrence of so many post-syphilitic nervous diseases by the assumption that the original disease has been improperly or incompletely treated. The writer firmly believes that such diseases as locomotor ataxia and general paralysis rarely occur without antecedent syphilis. Granting this, the question naturally arises whether anti-syphilitic treatment, applied during the time of so-called "secondaries," diminishes the likelihood that these diseases will occur as late sequences. This question he has attempted to elucidate by a study of a considerable number of cases (apparently about 150), in which the history showed that careful enquiry had been made concerning the treatment to which the patient had been subjected at the time of the original infection; and, in reckoning the average duration of treatment, that which had been carried out only after the onset of nervous symptoms, has, of course, not been taken into account. His conclusions are that: (1) Exudative and degenerative diseases of the nervous system, due to syphilis, are most liable to show themselves at the end of the third and the beginning of the fourth decade of life. The fact that locomotor ataxia seemed to develop earlier among the dispensary, as compared with the private patients, was probably to be explained by the added effects of alcohol. (2) Thorough and prolonged administration of anti-syphilitic remedies during the activity of the virus does not seem to materially prolong the above time limit. (3) That active and prolonged anti-syphilitic treatment does not seem to prevent the development of such diseases as locomotor ataxia and general paralysis. And, further, that the cases in which syphilis is confessed, and in which treatment has been most desultory and incomplete, are not more liable to the earlier development or the severe manifestations of either of these two diseases than those in which the treatment has been all it should be. And (4) that the administration of anti-syphilitic measures in the most approved way does not fulfil the requirement of cure, and that syphilis is often an incurable disease.

A Case of Brain Syphilis Heroically and Successfully Treated.—An encouraging and instructive case is recorded (*Alienist and Neurologist*, Jan., 1897) by Professor Krauss. A young woman, with

a good family and personal history, contracted syphilis; the exact date is not defined, but it apparently was soon after she had reached the age of 20, and she was treated for primary and secondary symptoms. At the age of 25 she began to complain of sharp, shooting and continuous pains in the head, which was also tender to the touch; she still had a characteristic roseola. Mercury and potassium iodide in ordinary doses failed to relieve her. On the advice of Dr. Krauss, mercurial inunctions and protiodide of mercury internally were pushed to salivation with complete success. In six weeks, however, she relapsed, the symptoms being this time much more severe, accompanied by paresis of the right side, partial aphasia, and several attacks of Jacksonian epilepsy. The treatment consisted in the administration of almost incredible amounts of mercury—hypodermic injections of $1\frac{1}{2}$ grain of the bichloride daily for ten days and inunctions of the yellow oxide ointment. Again recovery took place and she enjoyed the best of health for three months, when a partial relapse occurred. She was rapidly salivated with $\frac{1}{2}$ grain injections of the bichloride and inunctions of the yellow oxide, the latter this time applied to the elbow and knee joints. Once again the patient completely recovered and at the time of report all her symptoms were in abeyance. It is curious to note that, following the inunctions into the knee and elbow joints, pains developed in them, followed by weakness of the hands and a slight degree of leg-drop; other joints were free from pain. The writer was inclined to regard this as a neuritis due to the mercury.

Krauss believes the case to have been a specific meningo-encephalitis affecting the frontal and parietal lobes of the left hemisphere, and points out that such cases and gummata, if small and located in the meninges, offer a very fair prognosis, dependent upon the thoroughness and audacity of the treatment; while complete or even partial recovery is extremely doubtful in all cases where the brain substance has been infringed upon, or where embolism or thrombosis or other sequelæ of endarteritis exist.

Lesions in the Brain in Acute Yellow Atrophy of the Liver.—An apparently fairly typical case of acute yellow atrophy, occurring in a man aged 40, is reported (*Journ. Ment. and Nervous Disease*, Nov., 1896) by Drs. C. W. Burr and A. O. J. Kelly. It seems, however, that the usual cerebral symptoms only developed about six days prior to his death. But the specially interesting feature in the case is the presence, as demonstrated by the microscope, of marked changes in the cerebral cortex. In other published cases these have often either not been described or even denied. The Berkely modification of the Golgi method, and that of Nissl were used in the preparation of the sections; for the latter, thionin was the stain which gave the clearest outlines. All varieties of cortical cells were affected fairly equally, but the

changes in the cell-body varied from slight implication to absolute destruction. The chromophilic particles, instead of being arranged more or less in rows, were most irregularly distributed. From this slight change all gradations of destruction were visible until merely the deeply stained nucleus remained; there was usually, however, a layer of fine, stained, dust-like particles arranged around the nucleus, separated from it always by a clear unstained zone. The nucleus, normal in size, was generally distorted in shape and often showed projections and indentations along its periphery; while its normally clear karyoplasm and its chromophylic particles evinced an excessive affinity for the stain, sometimes even obscuring the nucleolus. The latter also showed an undue receptivity of the stain, and, while remaining normal in position and size, was apt to show a somewhat irregular contour. Two stages, first a swelling and second an atrophy, could be made out in the appearances presented by the dendrites. The first were more numerous and consisted in swellings and tumefactions extending a variable distance along the dendrites, the apical process itself being frequently affected close to the cell-body; the gemmulæ were mostly absent, but they and the normal varicosities at the point of branching of the dendrites were sometimes excessively large. In the stage of atrophy the dendrites had disappeared or become thinned and shortened, with rounded ends. The walls of the blood-vessels and the neuroglia elements of the cerebrum and cerebellum seemed free from disease.

Considering the prominence of cerebral symptoms in acute yellow atrophy, distinct signs in the cortex cerebri might well be expected. The hitherto barren results from microscopic examination of the brain in conditions of delirium, acute mania, and acute infectious fevers will probably give place to more fruitful ones as our methods of research improve. Granting that the above changes are the result of acute yellow atrophy of the liver, considered as a toxæmia, there is still the question whether they are due actually to the same poison itself, or to another or others produced by disturbance of any of the body functions.

The case may be advantageously compared with one of phosphorous poisoning, reported by Drs. Elkins and Middlemass (*Brit. Med. Jour.*, Dec., 1891), where there were mental symptoms during life and pathological appearances in the brain cortex after death.

General Paralysis Affecting Two Sisters in the Developmental Period of Life.—General paralysis occurring under the age of twenty is admittedly rare—a total of only about 50 cases having been recorded; though now attention has been directed to it, records are rapidly becoming more numerous, the last two years having furnished twenty such. Dr. A. Hoch (*Journ. Nerv. and Ment. Disease*, Feb., 1897) gives an account of the disease commencing in two sisters at the age of ten and fifteen respectively. The clinical picture in each was that of simple feeble-mindedness, showing itself some-

what suddenly in two apparently mentally and physically healthy girls; this gradually developed into definite dementia, without any excitement or delusion. Physically, each showed a markedly impaired gait and speech. In the case of the girl affected at the lesser age, the disease ran a course of six years, death being ushered in by convulsions. The other sister is yet alive and is now nineteen and a half years old. In her case, in addition, considerable lingual and circum-oral tremor may be noticed. The right pupil is persistently larger than the left, and neither shows any response to light or during accommodation, while the patellar and other tendon reflexes are exaggerated. The children were the youngest members of a family of seven, none of which present any signs of congenital syphilis; there is a double neuropathic heredity, in that the mother was very nervous, and the father had some anomalous nervous symptoms, while he also showed some slight evidence possibly of former syphilis. An autopsy was secured in the younger sister and confirmed the diagnosis. The common lesions of general paralysis were demonstrated in the cerebral cortex, while similar changes were found in the basal ganglia. In the cerebellar cortex was seen a more or less pronounced degeneration of many of the cells of Purkinjé, and diminution in the depth of the cortex with increase of its neuroglia. And in the cord, degeneration of certain of the tracts was noted.

Hysterical Analgesia.—A case, believed to be unique, is reported by Dr. C. C. Hersman (*Alienist and Neurologist*, July, 1896). It was that of a woman, aged 44 years, who came of a slightly insane stock, and had had two attacks of puerperal insanity. Her third pregnancy was cut short to relieve her of dangerous vomiting, and this again was followed by an attack of melancholia, from which however she recovered. Her present attack, one of melancholia with hysterical symptoms, had as its exciting cause the suicide of her husband. While tactile sense appears to remain normal, she has complete loss of sensation to pain; if her skin is pricked or pinched, her tongue prodded, or even her eye rubbed, she evinces not the slightest evidence of pain, nor can she distinguish between heat and cold. Her power of taste seems destroyed, and her desire for food paralysed, although she has been known to secrete food. Her evacuations are the result of her cleanly habits, not because she ever feels any desire, and the bowels rarely move without cathartics. She has lost all affective feelings for her children and family, and her desire for sleep would seem gone too, for she seldom sleeps without hypnotics. Such a complete analgesia with a blunting of the emotions, functions, and almost all the senses is very rare, in fact the writer can find no record of such a case.

Surface Thermometry of the Head.—A paper by Dr. McCaskey discussing the clinical value of observations upon the surface

temperature of the head appeared last October (*Alienist and Neurologist*). Some results obtained by previous observers were quoted, and the technique necessary to ensure accuracy was described. What is really registered by the surface thermometer applied to the scalp is the absolute temperature of the skin, which is the resultant of all the chemico-vital processes occurring between it and the brain and within the latter, minus the heat lost in transit; it is palpably modified by the heat of the brain, and this modification the surface thermometer readily estimates. The normal surface temperature of the two sides of the head is seldom equal. In meningitis, of the acute or subacute type, the surface temperature of the head would seem to be invariably elevated out of proportion to the general temperature, and to the greatest degree over those areas in which the inflammatory process is most intense. In cases of brain tumour, it is elevated in proportion to its proximity to the surface, and the rapidity of its growth, with consequent irritative phenomena; this applies also to abscesses and hæmorrhages. But, owing to frequent fluctuations, a single thermometric observation is of little value in diagnosis. On the other hand, in embolism the temperature has been found lower over the embolic area—in one case even 4 deg. has been recorded. Observations in cases of insanity have been conflicting, but most agree that acute mania shows an elevation. To sum up, the writer maintains that surface thermometry can no more be safely neglected in the study of brain disease, than can axillary and rectal temperatures in general disease.

Eastern Michigan Asylum at Pontiac.—The report for the biennial period ending June, 1896, is before us, and we have noted with interest some remarks by the Medical Superintendent concerning the readmissions. Of the whole number of admissions (467) during the period, 99 were readmissions of patients formerly under treatment in the asylum; but only 19 among these readmissions were instances of patients who had been classed as "recovered" at the time of their previous discharge. The average duration of absence of these 19 cases was a little over five years. Though this number (19) is less than it had been for some previous periods, much is made of these readmissions, and the circumstances attending the discharge and readmission of these patients are briefly alluded to, and any facts known concerning the history of each case since discharge are recorded. It would appear from a perusal of the discharge table, that not all cases, in which the mental symptoms have subsided, are classified as "recovered," a considerable proportion of them being marked "improved." Dr. Christian says, "The possibility of distinct attacks of insanity occurring in the same individual must be conceded, and to some extent we must look for readmissions of 'recovered' cases. However, careful enquiry will, as a rule, be

sufficient to mark such cases as intrinsically distinct from those in which a constitutional defect is the cause of the tendency to relapse after varying intervals, thereby placing upon the disease the stigma of chronicity."

ITALIAN.

By W. Ford Robertson, M.D.

The Relation of Epilepsy to Auto-intoxication.—C. Agostini (*Rivista Sperimentale di Freniatria*, 1896, pp. 267 and 435), following up the researches of Voisin and of Mirto, who have shown that the urine of epileptics possesses a special toxicity, and those of a number of other observers who have demonstrated that true epileptic fits can be produced as the result of auto-intoxication by abnormal products developed in the gastro-intestinal canal, has made an investigation into the composition and toxicity of the gastric fluid and urine in a number of cases of epileptic insanity at various periods in relation to their fits. The great care and strict attention to scientific requirements with which he appears to have carried out this difficult research, are such as to inspire confidence in the accuracy of the results he has obtained, as well as of the conclusions he has deduced from them. Without overturning any long-accepted theories he has made what certainly appears to be a most important contribution to our knowledge of the pathogenesis of epilepsy, and he has formulated new principles of treatment which, while they seem in the light of his investigations to be eminently rational, have already, as carried out by himself at least, been followed with success of a very remarkable and promising kind.

He finds that in the intervals between the fits the gastric juice is in most cases normal as far as can be recognised by mere chemical analysis, with, however, a tendency to hyperacidity and especially excess of hydrochloric acid. For a short time previous to a fit, and for some time afterwards, there are changes indicating a condition of transitory dyspepsia. An epileptic convulsion, in proportion to its duration and intensity, greatly disturbs the whole digestive functions of the stomach, increasing the secretion of hydrochloric acid and mucus, favouring the development of abnormal fermentation products, leading to the appearance of biliary acids, lowering the peptic action, and diminishing the sensibility, motility, and absorbing power of the organ. In the intervals between the fits the toxicity of the gastric juice (tested upon rabbits) is not necessarily greater than in healthy individuals, provided the patient is not suffering from chronic gastric catarrh. In the prodromal period in relation to a convulsive seizure, and especially in those cases in which there is chronic