On the Pathogenesis of Delirium Tremens is the title of a study by Dr. P. Hertz published in the *Hospitalstidende* in consequence of the paper on the same subject by Dr. Jacobson, referred to in my last retrospect. The results of Dr. Hertz's researches is to show that uncomplicated delirium tremens is always accompanied by a disturbance of the renal functions—an acute nephritis which is primary to the delirium. There is, therefore, every reason to suppose that this malady is an acute auto-intoxicational insanity following the insufficient performance of the renal functions in an acute nephritis. The special form of delirium tremens is only due to its arising in a chronic alcoholist.

Dr. Würtzen has published in the *Nordiskt-mediciniskt Archiv* some investigations on *Insanity in Danish Recruits*. They are based on forty cases observed during the last ten years. Predisposition was found in thirty cases, and insanity appeared shortly after the beginning of service, owing apparently to a lessened power of resistance in the individual. The author is not disposed to believe in a special insanity of recruits, but thinks that most of the cases are insanities of development or of puberty.

ITALY.

By Professor BIANCHI.

Italy has not yet a Lunacy Act. The various propositions submitted to Parliament have borne no fruit, owing to the fall of ministers or to the dissolution of the Chamber of Deputies. An Act is much required. New propositions, drawn up by an extra-parliamentary commission, of which the present reporter is a member, are to be considered. In the meantime insanity increases greatly in Italy. Districts, which at present are without asylums, in the modern signification, are being provided with them.

Psychiatry in Italy is at present less occupied with experimental investigation than with histological, clinico-chemical, and bacteriological work.

The principal work recently accomplished may be briefly referred to.

On the Origin and the Mutual Relationships of the Nerve and Neuroglial Elements, by F. Capobianco and O. Fragnito.—The authors give the results of their researches under four headings. Under the first they treat of the neuroglia, to which, contrary to the almost unanimous opinion of recent observers, they assign a double origin, ectodermal and mesodermal. The former is generally admitted, but not the latter. The second chapter, dealing with the origin of the nerve-cells, is of less importance, the authors simply confirming the demonstrations of previous workers in respect to the ectodermal origin of these cells. Their development is followed through the four principal stages—germinative cells, transitional cells, neuroblasts, nerve-cells.

The third chapter deals with the origin of the nerve-fibres, in regard to which two opposite theories exist, some observers holding the fibres to be nothing more than prolongations of the nerve-cells, others believing them to be derived from the transformation of other cell structures. In the present work the latter view is upheld, and supported by numerous zoological observations made by the authors. Various phases in the transformation in question are exhibited in the plates which accompany their work. In the complex structure of the nerve-fibre other elements also enter, and these are considered here. Associations are not wanting between neuroglia and nerve-cells, as first demonstrated by Paladino, and now confirmed by the authors. The question of this relationship is dealt with in the fourth chapter, and also the further question of relationships between neuroglial cells, of neuroglia to nerve-fibres. No clear light is thrown upon the subject of relationship or association between the nerve-cells—intra-cellular association—no decisive evidence of anastomosis is advanced.

Observations upon the Anatomy and Physiology of the Cerebral Visual Centres, by C. Colucci.—The author adopted, in these researches, the method of examination of Marchi, at different periods after resection of the optic nerve, or of enucleation of the bulbus oculi, in both young and adult animals. The Weigert-Pal and Azoulay methods were also employed, and carmine staining. Some of the principal results obtained in dogs were as follows:

Three fundamental fasciculi are separable in the optic nerve—a direct (temporal), a crossed (nasal), and a papilla-macular. The visual fibres are concentrated especially in four regions of the brain—the foot of the corona radiata, the posterior segment of the internal capsule, the thalamus with the external geniculate body, the occipital lobe. Amongst the various fasciculi which arrive at these regions by various courses the following, especially, contain visual fibres: the stratum zonale, the reticulate zone of Arnold, the inferior longitudinal fasciculus, the so-called occipito-frontal fasciculus, the ependymal grey stratum, the putamen, the thalamic radiations of Gratiolet.

As a result of enucleation of one eye in new-born animals a deficiency in development of the brain, particularly in the parietal and occipital regions of the opposite hemisphere, is noticeable. The author maintains that the anatomical area for the mechanism of vision is much larger and more complex than is at present admitted. In the occipital area of vision, the centre of greatest functional intensity, are gathered up the images already prepared by a lengthy series of supplementary functional centres, situated in the optic thalamus, the external geniculate body, and the anterior corpora quadrigemina. The visual area is found especially on the external and superior aspect of the occipital lobe, but its centres and connections extend to the frontal lobes. The "occipital registration" of visual images is of service to the intellect solely in consequence of such associations, which permit of the most ample and diversified elaboration.

On Certain Alterations in Nerve-cells as a result of Death by Electricity, by G. Corrado.—The author's experiments were conducted on dogs, for the most part adult and robust. The continuous current was applied. The tension and intensity registered were from 720 to 2175

volts, and from 20 to 30 ampères. One electrode was applied to the head, the other to the lower end of the back. Contact lasted from an instant to three to four seconds. Death took place almost directly. Punctiform hæmorrhages were found at various points throughout the cerebro-spinal axis, and also bullæ of free gas on the under aspect of the cerebro-spinal meninges, and in the blood.

As regards the changes in the nerve-cells, various deformities, including laceration and mutilation, were met with. The cell contour was blurred and irregular, and at times an appearance of exudation of cell protoplasm was locally noted; vacuolation and chromolytic changes were also exhibited, also a tendency on the part of the chromatic substance to separate itself from the cell contents. The nucleus was sometimes wanting, or its contour was irregular, or the nucleus was decolourised; or it was displaced towards the periphery of the cell. Occasionally its investing membrane was ruptured. The nucleolus showed itself to be the most resistive part of the cell, being preserved and well stained even when the rest of the cell was seriously damaged, and when no trace remained of the nucleus; nevertheless, even the nucleolus was sometimes wanting. It also showed a tendency to excentric displacement, even to the extent of escape from the nuclear membrane, and transportation to the periphery of the cell. The cell prolongations showed often varicose atrophy, and also were irregularly broken, with the appearance of decomposition of the fragments. Not infrequently the apical prolongation of the pyramidal cells showed a spiral disposition.

On the Lesions of the Nerve-elements resulting from Experimental Poisoning by Nitrate of Silver, by A. Bonaggio.—Lesions are produced in the cells and in the fibres. Those in the spinal cord are particularly in evidence in the cells of the anterior cornua. There may be a systematic atrophy of the posterior columns, or of the lateral—a change initial in the nerve-fibres, and not secondary to the cell-lesions.

On the Changes in the Central Nerve-elements in Death from Cold, by B. Mirto.—The changes exhibited by these elements in the case of animals dead from cold are not dissimilar in general from those met with in intoxications, endogenous and exogenous. The author, however, inclines to the belief that death by cold is itself in great measure due to an auto-intoxication, especially as there occur in such cases grave changes in the emunctories (skin, kidneys), resulting in defective elimination of the products of metabolism.

On the Psychical Disturbances and on the Alterations in the Central Nervous System produced by Absolute Insomnia, by C. Agostini.—The various degrees of psychical disturbance, from the most elementary to a delirious condition, resulting from insomnia, probably find their explanation in auto-intoxication of the nerve-elements, the consequence of excess of disintegration without adequate reparation: a process connoted by serious and numerous lesions of the nerve-cells and their protoplasmic prolongations, especially in the anterior cerebral lobes.

The Anatomical Conditions in a Case of Unilateral Ocular Atrophy, by C. Colucci.—The author had the opportunity of examining the brain of a man who, eight years before his death, was struck on the right eye by a stone; gradual atrophy of the bulb followed. The parts were

examined after treatment in a solution of formaldehyde, 16 per cent., and nitrate of silver, 1 per cent. The case confirms many of the author's researches upon the optic paths in dogs. He describes very numerous and complicated systems of visual paths, direct and associated, and makes it clear that the visual function is subserved, in its physical basis between the retinal and cortical neurons, by structures—paths and centres—much more abundant than hitherto admitted. The occipital lobe represents the centre of maximal intensity of visual perception, but this lobe is connected by centrifugal and centripetal paths with almost all "the other cortical stations," including the frontal lobe. The hemisphere opposite to the atrophied bulb in this case was as a whole smaller than that of the same side.

The Excitability of the Cerebral Cortex and the influence upon the same of the newer Therapeutic Agents employed in Epilepsy, by C. Rossi.—The author has studied, experimentally, in dogs the effects upon the "excitability of the cerebral cortex" of the various forms of treatment of epilepsy proposed by Welch, Flechsig, and Bechterew. He finds that the treatment of Welch (sodium borate) has no influence, and that of Flechsig and the methods of Bechterew both diminish notably the "cerebral excitability," and since this diminution is due exclusively to the influence of the bromide, the useful results given by these methods of treatment in epilepsy are to be attributed solely to this drug.

On Post-epileptic Albuminuria, by P. Galante.—The researches were conducted with the trichloroacetic acid method in warm solution, a method recently proposed by Reole (and regarded by some as the most sensitive of all methods). Sixteen epileptics were under observation, all young and vigorous, without evidence of cardiac or vascular lesion: fourteen males and two females. In six there was, besides the epilepsy, more or less dementia, in two the mental powers were unimpaired, but they had occasional attacks of delirium with hallucinations before or after the convulsions. In five of the cases there was imbecility, and two others were idiots. For quantitative analysis the author employed Scherer's method as modified by Reale, and that of Primavera, the latter when the former was not feasible. The maximum and minimum figures given are those obtained by Scherer's method. The chief results were as follows:

1. Constantly after epileptic seizures albumen was found in the urine. The maximum amount found was gr. 2·0435 per cent., the minimum gr. 0·05 per cent.

2. The duration of this disturbance is various—from four to eight hours, or twelve, and sometimes more.

3. It sometimes occurs that the progressive diminution (? in the amount of albumen) is suspended for a period. In these cases the quantity of the urine increases whilst the specific gravity is notably diminished, which suggests that a diuretic action has been set up by the urea, either accumulated in the blood or produced by the excess of muscular action.

4. If albumen was found normally in the urine of these epileptics, the amount increased after the attacks, and thereafter gradually diminished down to the normal amount.

5. The more violent attacks are in general followed by a somewhat

more considerable albuminuria; a series of attacks does not lead to a like increase.

6. In two attacks of simple vertigo, which supervened in one of the two patients who presented normal psychical conditions, no albuminuria occurred.

7. The amount of indican varied with that of albumen, the former diminishing *pari passu* with the latter.

The author explains this albuminuria (1) by renal stasis, secondary to the initial tonic stage of the fit and to the dyspnœa of the second stage; (2) by cerebral excitation produced by the stasis in the domain of the intra-cranial organs; (3) by excitation produced at the bulb (albuminogenous centre of Bernand); (4) by the toxic influence exercised upon the renal epithelium by the augmentation of the normal products of metabolism (urea, &c.) and by toxic products from the intestine; (5) by the intense muscular work, increased cutaneous and pulmonary exudation, and rise of temperature.

P. Galanti publishes an article upon *Gastric Digestion in Melancholia*, from which it is to be gathered that there is in this disease a diminution in the excito-motor power of the stomach, so that after one hour of ingestion of the experimental meal of Ewald 113 to 200 c.c. of chyme, on an average 163 c.c., were to be found in that organ.

The alimentary substances being retained in the stomach, there result fermentative processes and the development of organic acids, which, according to Bouchard, would give origin to products analogous to ptomaines, with toxic effects upon the organism. There is also evidence of the transformation of peptones into organic (toxic) bases, in consequence of putrefaction. These observation are in harmony with the indications of modern research, which tend to regard melancholia as a malady due to specific toxic influences. Hypochondriacal delusions may well be ascribed to gastro-intestinal disturbances, dependent upon gastric hypokinesis and abnormal gastric digestion.

G. Bellisari has conducted a research upon the *Secretion of Hydrochloric Acid in Epileptics*, from which it appears that there exists in the stomach of epileptics during fasting a quantity of HCl, which is pretty constant. This is much in excess of that which is met with in healthy persons. The quantity of free HCl reaches its maximum after the convulsive seizures, then gradually diminishes to the point of disappearing, without being influenced by the near approach of a fresh attack.

ASYLUM REPORTS, 1897–8.

Some County Asylums.

Warwick.—We are glad to see that Dr. Millar has put before his Committee the benefits to be expected from combining provincial asylums for the institution of systematic pathological research.