

The success of the experiment of reducing the number of locked doors at night and the demolition of the airing-court walls is worthy of note. The entire removal of the doors of rooms occupied by 100 patients seems somewhat questionable. In the Report for 1887 there is nothing calling for notice, except that it extends to only half a page.

Waterford.—Various structural alterations have been effected adding considerably to the too limited day-room and dormitory space.

2. *German Retrospect.*

By W. W. IRELAND, M.D.

Is the Pineal Gland a Rudimentary Eye?

Professor Max Flesch ("Neurologisches Centralblatt," No. 19, 1888) combats the theory that the pineal gland of mammalia is a rudimentary parietal eye, and has ceased to have any function in the maintenance of the organism. He argues that the gland is no rudimentary organ—(1) because nerves enter into it; (2) because it gives a peculiar excretion; (3) because on the outer side, next the brain, there is an epithelial structure of a peculiar character.

He does not regard the gritty particles as a peculiar secretion, but considers the pigment specific. The pineal gland differs very much in form, consistence, size, structure, and quantity of pigment in different mammalia. The *résumé* of Dr. Flesch's paper is so short that it becomes obscure. The original paper is in the "Anatomischer Anzeiger," No. 6, 1888.

Brain-Centre for the Salivary Secretion.

Drs. Bechterew and Mislowski ("Neurologisches Centralblatt," No. 20, and "Centralblatt für Nervenheilkunde," No. 20, 1888) have sought for a brain centre for the secretion of the saliva. In this search they were not the first, for MM. Lepine and Rochefontaine ("Gaz. Méd. de Paris," 1875) have already pointed out that irritation of the anterior portion of the hemispheres by a weak galvanic current was followed by an increased secretion from the sub-maxillary gland, an abundant flow of clear saliva, which stopped immediately when the chorda tympani was cut. The point which was most excitable for increasing the salivary secretion was immediately behind the sulcus cruciatus, Ferrier's points 1, 2, 3, and 4; that in front of the sulcus cruciatus, running towards the olfactory lobe, also excited the saliva, but in a less degree. Braun, who repeated these experiments, found that while a galvanic current applied to this region in the brains of dogs caused abundant secretion of the saliva it was also accompanied by energetic contractions of the facial muscle.

Drs. Bechterew and Mislowski made their observations on curarized dogs. A canula was inserted into Wharton's duct and

the saliva received into a graduated vessel. On laying bare the brain it was found that a large cup-shaped region in front of the sylvian fissure, stretching across the anterior median and the three frontal convolutions, when touched by the electrodes caused plentiful secretion of saliva. In the lower part of this region a weaker electric current was sufficient to cause the saliva to flow. Only through this lower strip could the secretion of the parotid gland be stimulated. Section of the chorda tympani on the operated side at once arrested the flow of saliva.

The Brain Centre for the Movement of the Bladder.

Drs. W. Bechterew and N. Mislawski ("Neurologisches Centralblatt," No. 18, 1888) pointed out that little has been done to solve this question. Budge traced the excitation of the vesical contractions to the *crura cerebri*, and Rochefontaine pointed out four points in the sigmoid gyrus of which electrical excitement caused contraction of the bladder.

To elucidate this question Drs. W. Bechterew and N. Mislawski have instituted some careful experiments on dogs and cats. They found that by electrical irritation of the inner side of the anterior and posterior portion of the sigmoid gyrus contractions of the bladder were excited. They also found that a weak current applied to a point in front of the optic thalami could also cause vesical contractions, and this they regard as a reflex centre.

Results of Removal of the Thymus.

Dr. Awtokratoff, in a communication given to the Psychiatric Society of St. Petersburg ("Neurologisches Centralblatt," No. 24, 1887), detailed some experiments upon removal of the thymus gland. Of twelve dogs only one survived the operation for any length of time. Most of them died in nine or ten days—one sixteen days—after the operation. Two or three days after the removal of the gland there was a remarkable dulness and slowness in their movement, and a peculiar alteration in their gait. After this came on tremblings, which began in the hind legs and spread gradually over the whole body. The temporal muscles and the tongue were most affected. These tremblings were gradually succeeded by clonic and tonic convulsions. Some of the dogs had epileptoid attacks and died in the *status epilepticus*. There was also diminution of the bodily weight, while the temperature remained normal. There was considerable increase of the galvanic excitability in the peripheral nerves, and in two dogs there was found to be an increase in the electrical irritability of the motor centres in the brain.

In several cases there was acute catarrhal conjunctivitis.

From the time which elapsed till the appearance of the convulsions the author supposes that a poisonous substance is produced

in the organism by the removal of the thymus gland, which has a cumulative action.

The Weight of the Brain and of its Parts in Insanity.

Dr. Tigges' paper on this subject fills 125 pages of the "Zeitschrift für Psychiatrie" (xlv. Band, 1tes and 2tes Heft). The learned author comes to the following conclusions:—With a greater height of the body we have in general a greater weight of the brain. Tall people have heavier brains than short people. This increase of the weight of the brain with the stature is greater with women than with men; perhaps greater with the sane than with the insane. The relative weight of the brain to the stature increases with the stature, *i.e.*, the relative increase is greater with tall people than with people of middle size. The hemispheres, cerebellum, and base of the brain all increase in weight with the stature. In women the increase is regular, *i.e.*, all the parts increase in proportion to the body itself, though the relative weight of the brain becomes smaller.

On looking over the table of average weights collected by Dr. Tigges the heaviest brains seem to be Hanoverians; next comes the people of Westphalia and Baden.

The great weight assigned to the brains of Hanoverians come from the tables of Krause and Henle. The former observer gives 1,461 grammes for the average weight of males, and 1,341 for the females; the latter 1,460 grammes for males, and 1,300 for females. The number weighed by them is not stated, but they were brains of lunatics. Bergmann weighed 152 male and 90 female brains of Hanoverians, and gives the average weight as 1,372 for males and 1,272 for females.

The average brain weights of different nationalities is stated by Tigges in the following table. It is singular he does not give the average brain weight of Italians, for which, surely, there is material enough in the contributions of Morselli and Seppilli:—

	Males.	Females.
	grammes.	grammes.
Hanoverians, Westphalians, and Badeners ...	1,433	1,284
Mecklenburgers	1,362	1,244
Different German Nationalities (Rud. Wagner)	1,362	1,242
Saxons and Swiss	1,354	1,240
Bavarians	1,362	1,219
Austrians (German)	1,297	1,157
Other Austrians	1,347	1,171
Russians	1,349	1,216
Scotch	1,423	1,267
English	1,326	1,200
French	1,340	1,222
All Europeans together (Davis)	1,367	1,204

Brains of Deaf Mutes.

J. Waldsmidt ("Allgemeine Zeitschrift für Psychiatrie," xlii. Band, 4 Heft) describes two brains of born deaf mutes. One was a man of 46 years; the other a girl of 19. Neither of them seemed to have received much instruction, and both were of low intelligence. The two brains had this peculiarity in common, that the third convolution and island of Reil were less developed on the left side than on the right. This is made clear by some lithographed plates, in which the left island is compared with the right, and with figures from a normal brain. The temporo-sphenoidal gyri were well developed on both sides in the male. In the female brain the third temporal gyrus is scarcely recognizable.

Deficiency of the Corpus Callosum.

Dr. Onufrowicz ("Archiv," xviii. Band, 2 Heft) and Dr. Kaufmann ("Archiv," xviii. Band, 3 Heft, and xix. Band, 1 Heft) describe cases where the corpus callosum was found wanting. Dr. Onufrowicz has collected twenty-seven instances from the literature of the subject, his own case making twenty-eight. On opening the cranium of a small-headed idiot, thirty-seven years of age, the hemispheres fell asunder for want of the connecting band of the corpus callosum. The olfactory lobes were also wanting, and the brain in other respects was highly abnormal. Instead of the gyrus fornicatus there were radiating sulci running upwards and outwards. The cases of the deficiency of the corpus callosum which have been published have as yet failed to give us a clue to the function of that organ, for in most of them there are important defects in the cerebrum sufficient to account for any mental fatuity; and there are at least four cases on record where the corpus callosum was wanting, and there was no trace of mental affection or deficiency observed during life. Erb has observed that in the adult, if the rest of the brain be healthy, almost the whole corpus callosum can be destroyed without any disturbance of motor power, of co-ordination, of sensibility, of reflex action, of sense, of speech, and without any noticeable injury to the intelligence. Dr. Edward Kaufmann contributed two more cases. The first an imbecile girl of twenty-four, in whose brain he supposes the organ was destroyed through hydrocephalus internus in the third or fourth month of foetal life. The second was a man of forty-five, apparently sound of mind, who died of pneumonia. The structure in question was found to have been destroyed from softening following on an embolism of the right artery of the corpus callosum. Both these observers agree in pointing out that the tapetum, a longitudinal layer of fibres, is not properly a part of the corpus callosum. They consider that this layer connects the occipital and frontal gyri. Hence they give to it the name of fronto-occipital association bundle. In general it is so obscured

by the crossing fibres of the corpus callosum proper that its separate existence is difficult to observe, consequently it comes into prominence where the corpus callosum is absent. Both Dr. Onufrowicz and Dr. Kaufmann consider quite untenable the old view of Foville, revived by Professor D. Hamilton, that the corpus callosum is a decussation of the fibres of the anterior capsule.

Dr. O. observes that in cases of abscess within the hemispheres there is sometimes a secondary atrophy of the corpus callosum opposite the abscess. In such cases the internal capsule is more or less atrophied, but on the same side as the abscess, not on the other side. If Foville were right the atrophy should affect both corpora striata; but in our case, observes Dr. O., the inner capsules are, considering the smallness of the brain, normally developed, although there is no corpus callosum. In Dr. Kaufmann's case, also, though the corpus callosum was entirely destroyed, the inner capsule on both sides was found to be entire, and no alteration could be observed through the microscope. They, therefore, hold with Meynert that the corpus callosum is a commissure of identical regions of each hemisphere.

Virchow showed to the Berlin Association for Psychiatry (see "Centralblatt für Nervenheilkunde," No. 11, 1888) the brain of a child who died when six weeks old. The corpus callosum, as well as the anterior commissure, was wanting, and there was hydrocephalus internus. Other parts of the brain and cord were diseased and defective.

The Structure of the Spinal Cord in Microcephalus.

Alexandra Steinlechner Gretschnischnikoff has an elaborate paper on this subject, which occupies forty-one pages of the "Archiv" (xvii. Band, 3 Heft). The observations were made upon two cases of microcephaly. Sections of the cord were very carefully examined. It was found diminished in size and diameter, so that, as Theile pointed out, microcephaly and micromyelia go together. The diminution in size of the cord especially affected the pyramids, the columns of Goll, the ganglia of the anterior horns, and to a lesser degree the direct lateral cerebellar tract. The size of the posterior root zone was not affected. As no pathological explanation could be found, the authoress concludes that the portions of the cord thus found diminished in bulk are developed in correspondence with the brain.

Structural Characteristics of Criminals.

Dr. H. Kurella, with great ability, examines the different observations made in Italy and France upon the structural characteristics of criminals. Those who get within the grasp of the law fall into two classes—the occasional criminal, the man who, under peculiar temptation, or through political or religious theories, has broken the law; and the habitual criminal, whose whole life is at

war with society. Such criminals have a physiognomy of their own. Lombroso, who has studied them in a methodical manner, finds that certain defects are commoner with them than with any other class. The most frequent of these peculiarities seems to be prominence of the superciliary ridges, abnormal forms of the skull, and abnormalities of the wisdom teeth. The cranium in general is smaller, and there are often peculiarities in the convolutions. Individuals who bear a good reputation may have one or more of the peculiarities he mentions, but very few men bearing a good character have many such marks. Among 400 individuals of unblemished reputation only one presented the full criminal type. This unfortunate individual would have little chance of commencing a dishonest career, as he would be suspected at once. Marro, who examined 507 male criminals and 35 female criminals in great detail, comparing them with a hundred people of undoubted good character, found that in height and weight there was no great difference. The hands of criminals are longer; the form and circumference of the skull give nothing characteristic; the capacity of the cranium seems less, especially in the anterior part of the brain; the forehead is low and narrow; the chin strongly developed; the beard is often scanty or wanting; and the ears deformed. Left-handedness is found to be much commoner with criminals than with normal people. The majority of habitual criminals come from very young or very old parents; 79 per cent. of them were born in great poverty. They are characterized by a striking insensibility to moral considerations. Epileptoid types are common. There is a general stupidity, want of self-control, and disposition to rebel against the usual restraints of society, which constitutes a variety of imbecility. Writers like Lombroso, Marro, Moeli, Despine, and Larete have studied this form of derangement in prisons and penitentiaries, not in asylums. In fact, the classical symptoms of insanity, such as hallucinations, delusions, involuntary movements, and excessive passions, are generally wanting.

In this connection we may notice the paper of Dr. Schaefer on "The Question of the Committal of Insane Criminals," based on Sander-Richter's work "On the Connection between Insanity and Crime, Berlin, 1886," and the article of Dr. A. Pick "On the Discharge of Criminal Lunatics." They are published in the "Allgemeine Zeitung," xlv. Band, 1 Heft, and xlvi. Band, 1 Heft. We regret that there is not space at our disposal for a review of their contents.

The Sympathetic System in Insanity.

Dr. Helweg claims to have made an important discovery in the pathology of insanity. His article, which fills eighty pages of the "Archiv für Psychiatrie" (xix. Band, 1 Heft), has been translated from the Danish by Dr. H. Kurella.

The following is a condensed account of his researches:—At the upper part of the cervical cord between the anterior and lateral columns he has found a wedge-shaped corner of somewhat harder tissue which readily colours with carmine. The base of the wedge is turned to the periphery and the point to the anterior horn of the grey matter of the cord. On being carefully examined this corner of tissue is found to be composed of the finest nerve fibres yet observed in the white or grey matter of the cord. They measure from 1.1.5-2 μ in calibre. He has traced these fibres from the middle of the dorsal portion of the cord upwards through the pons to the inferior olivary ganglion to the middle of the tegmentum, and then to the anterior of the corpora quadrigemina and at last to the posterior commissure. Probably they end in the lobes of the brain. Dr. Helweg believes this to be a pathological change of the sympathetic system accompanying insanity. He has found this fine structure of nerve fibres in the bodies of 47 persons who had been insane, but could not find them in the body of any sane person which he had an opportunity of examining.

Neurasthenia and Pathophobia.

Professor Kowalewsky ("Centralblatt für Nervenheilkunde, No. 3, 1887") describes a case which fell under his observation in the Clinique of Karkow. He was 32 years of age, came from a neurotic family, and was from childhood of an excitable and enthusiastic temperament. As he grew up he became addicted to drinking and had frequent attacks of vertigo, pains in the back, and trembling of the hands. These attacks passed away without any treatment. When he was 18 years of age he learned that his teacher was dead; he went to bed and fell asleep. During the night he awoke and a series of questions came into his mind which he could not banish. The teacher is dead, what has happened to him after his death? I can also die. What will come to me after death? We shall be in another world. What is the other world? We are all from God; but what is God? Why is God not like men? These questions seized his mind with extraordinary force; he was full of fears for a whole day. The day after the patient poured a pitcher of cold water over himself and, as he expressed it, there was a parting. The world existed for him no more. He lived out of the world. He met people, spoke with them, went on his business, no one remarking anything special about him, and he still felt that the world existed no longer for him. This lasted for two months. The patient travelled to Kusk, there he awoke. The world was now once more for him, he was again a living man. From his 20th to his 27th year he drank much. He is married and had a little daughter, who died in the third month of eclampsia.

After a bout of drinking, followed by an interval of sobriety, he fell into a peculiar condition. He had vertigo; darkness came

before his eyes; his legs trembled, his heart beat. There was a feeling of constriction in the windpipe. He had to seek succour in the house of an acquaintance. After a time he quieted and walked out. For six months he remained in a nervous and disturbed condition, irritable, sleepless, starting at the least sound. These attacks occurred at times for two years, during which he was troubled with intense attacks of agoraphobia accompanied by melancholy. He was troubled with feelings of jealousy about his wife, which ceaselessly occupied his mind, although he recognized their groundlessness.

In this pitiable condition he sought refuge in the hospital. He was treated with cold douches on the spine sustained for ten minutes, a good diet, and muscular exercise. Under these conditions the nervous irritability passed away, the sleep became quiet, and he left the hospital quite well. The author considers that this case supports the view that neurasthenia is a common ground for a number of nervous symptoms and dominant ideas sometimes described as separate diseases.

Different manifestations of pathological distress like agoraphobia, claustrophobia, and Grübelsucht are but different symptoms of a common pathophobia.

The Duration of Life in Epilepsy.

(“Allgemeine Zeitschrift für Psychiatrie,” xxxiv. Band, 4 Heft.) Dr. Köhler, of Hubertusburg, has made an inquiry into this subject principally based upon insane and idiotic epileptics. He has arrived at the following conclusions:—

1. Epilepsy shortens life.
2. This shortening of life occurs at a later age in females, while in males the most dangerous time is until 25 years.
3. The danger is greater with epileptic idiots.
4. Residence in asylums guards against dangers which are frequently met with in the outside world and in families.
5. It is highly necessary to place the epileptic at the earliest possible time in suitable asylums partly for cure, partly to moderate the attacks, partly to guard against the physical and ethical deterioration, and partly to preserve the power of working and of occupation.
6. Although the dangers which surround the epileptic seem to be the same in an asylum as outside, they are much greater in the outer world through complications and quarrels or through the use of alcoholic drinks, through sexual excesses, accidents during the attacks, and excitements of various kinds.

Resistance to Electricity in Exophthalmic Goitre.

Charcot gave prominence to a characteristic symptom in exophthalmic goitre which Romain Vigouroux had discovered. It consisted in a diminution of the resistance of the body of the

person affected by this disease to the passage of the galvanic current. This promised to be a valuable discovery, but Dr. Martins ("Archiv für Psychiatrie," xviii. Band, 2 Heft) was unable to find its existence save in cases where the skin was unusually soft, and this held good of individuals affected with any disease.

Dr. A. Eulenburg ("Centralblatt für Nervenheilkunde") has also examined the question, and although he found that in some cases the galvanic current could be passed more easily through the chest, the result was that there was no such general modification to the galvanic current as to make Vigouroux's observations of any diagnostic value.

New Method of Hardening Nerve Tissues.

Carl Benda ("Centralblatt für Nervenheilkunde," No. 16) describes a new method suitable for hardening portions of the nervous centres not bigger than the brain of a large dog. He puts them in a ten per cent. watery solution of the pure officinal nitric acid, and then, *without* further washing, he transfers the preparations into a solution of bichromate of potash. The strength is one volume of saturated solution of the salt in cold water to two volumes of water. The first quantum is renewed after some hours by the addition of a saturated solution of one volume to the same volume of water. For the brain and spinal cord it is necessary to keep them steeping for about eight days. A temperature of about 100 F. is recommended.

Preparations after this method give a well-marked definition of the nerve fibres with and without the axis cylinder, and they take on a fine colour with logwood.

Degeneration of Nerve Fibres.

Dr. M. Friedmann ("Neurologisches Centralblatt," No. 4 and 5) gives a description of some careful studies he has made on degenerations of the medullary matter of the brain after abscesses or sclerosed spots. His observations confirm the distribution which Meynert has assigned to the association bundle of fibres connecting the convolutions. Dr. Friedmann finds that in paralysis there is a diffused general wasting of the fibres which are thus sensibly diminished in numbers.

In No. 24 of the same periodical Dr. Friedmann treats of the degenerative process in the medullary matter of the hemispheres in general paralysis. He finds that Tuczek's discovery of the disappearance of the nerve fibres in the cortex is only a part of the general wasting of the nerve fibres in the whole encephalon which may extend to the inner capsule and the basal ganglia.

Dr. Friedmann describes four forms of degeneration of the nerve fibre.

1. The secondary degeneration of conducting tracts which follows abscess of the cortex, or centrum ovale, and which may extend into the cord.
2. Degeneration of a circumscribed spot. This may take the form of hardened patches as a result of chronic inflammation.
3. Diffused general wasting of the nerve fibres.
4. The degeneration may appear as a diffuse wasting of the fibres in the centre of the centrum ovale, implicating especially the radiating fibres and sparing the descending fibres. Thus this degeneration may be in some degree the opposite of form 1.

Pathological Alterations in General Paralysis.

Dr. Zacher ("Archiv für Psychiatrie," xviii. Band, 1 and 2 Heft) has examined 31 brains of lunatics through approved methods. Thirteen of these suffered from general paralysis; six from senile dementia; five from epilepsy and idiocy, and seven from functional disorders. As a result of his laborious researches he confirms the observations of Tuzek that in general paralysis there is a notable wasting of the nerve fibres. He finds, however, that this wasting is not peculiar to general paralysis, for it was also apparent in five cases of senile dementia, three cases of epileptic insanity, and two cases of insanity connected with drunkenness. In some cases the wasting took the form of simple atrophy, in others it took the form of varicosities with discoloration of the nerve fibres. In other cases, again, there was an irregular swelling of the fibres which took an irregular form, becoming crooked or rough in contour. These changes, which are difficult to describe in words, are illustrated by lithographic figures. In all cases of general paralysis examined he found alterations in the ganglion cells which was of different character from that observed in senile dementia.

Zacher agrees with Tuzek that in general the frontal lobes are first affected and found to be most deeply altered, but he does not agree with him in finding that the process of wasting always goes from the more superficial to the deeper layers of the cortex. In some cases he found the second or third layer most affected. Nor does he admit that the degree of wasting of the fibres furnishes a measure of the depth of the dementia. In two cases of idiocy Zacher observed a moderate disappearance of the nerve fibres, and in some cases of mental weakness he mentions an unusual fineness of the nerve fibres.

Microscopic Changes in General Paralysis.

Dr. P. Kronthal ("Neurologisches Centralblatt," No. 23, 1887) has made some careful studies on the pathological anatomy of progressive paralysis in Professor Mendel's laboratory at Berlin. He has used Golgi's method of treating and colouring his sections.

The principal results are, he finds, an enormous increase in the number of spider cells and an unusual number of vessels. The connective tissue is also increased. He is uncertain whether the spider cells have become more apparent in the brains of general paralytics by increasing the girth and the calibre of their branches, or whether they are metamorphosed from ganglion cells or lymph corpuscles. The ganglion cells themselves are seen to lose their proportions and the symmetry of their forms. The difference between the diseased and the normal ganglion is well shown in Dr. Kronthal's woodcuts.

Post Febrile Dementia.

Professor H. Emminghaus devotes twenty-one pages of the "Archiv" (xvii. Band, 3 Heft) to the study of a case of post febrile dementia. The subject was a student of mathematics in the University of St. Petersburg, who took ill of fever, after which he fell into a hypochondriacal, melancholy, and restless condition. He left the house at night to wander about. On being sent to the Psychiatric Clinique he soon passed into a state of profound dementia, in which he required to be fed and cared for like an infant. He ceased to speak or to understand words, and paid little attention to objects of vision save that he noticed the approach of human beings. After being a month in the Clinique he died of pneumonia with minute abscesses in the kidneys. Sections of every part of the brain were examined with great care. The principal alteration observed was "cloudy swelling" of the protoplasm of the cells (albuminöse trübung), the nuclei being indistinct. This was held to explain the loss of functional power as the nerve fibres of the cortex showed not the slightest abnormality, though the processes of the cells were sometimes granular; the degeneration of the ganglion cells was found to be greatest in the middle layer of the cortical substance. Rindfleisch and Adler found a similar degeneration. In cases of psycho-motor excitement and mental weakness, Dr. Emminghaus thinks that if the patient survived he might have recovered the integrity of his mental faculties as the nerve fibres had not become diseased, and indeed some improvement in the patient's mental condition had been noticed before his death. The author observes that mental weakness following fevers lasting a longer time has ended in recovery.