and other systems of the same class. We hope shortly to review at greater length the numbers of the "Revue" for the present year, which fully maintain its high average of versatility, interest, and scientific value.

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2. *German Retrospect.*

By William W. Ireland, Preston Lodge, Prestonpans.

Comparative Size of Crania of Townspeople and Villagers.

Johann Ranke, of Munich (cited in the "Centralblatt für Nervenheilkunde," 1 Juni, 1882), has studied the relative size of the crania of the inhabitants of the town and country, upon a hundred males and a hundred females from villages, and two hundred skulls from the city of Munich. He finds that, though the size and stature of the country people are greater, the cranial capacity is less in both sexes. The mean capacity of 200 skulls of both sexes was

For the town population,	1442 c.c.	For the rural population,	1419
Of 100 males,	1323	Of 100 males,	1303
Of 100 females,	1361	Of 100 females	1335

The mean capacity of the maxima most frequently observed in crania from the rural population was found to be about 50 c. c. less than the mean maxima of the civic population. In the latter there were more big skulls, and fewer small skulls, than were observed with the villagers.

The First Bridging Gyrus in Man and Apes.

Dr. N. Rüdinger, as we learn from a notice in the "Centralblatt für Nervenheilkunde," Nr. 12, 1882, has given special study to the interparietal fissure and the convolution, called by Gratiolet, premier pli de passage supérieur externe (gyrus occipitalis primus of Ecker, or the first bridging gyrus of Turner). This convolution increases in fulness from the lower monkeys to the primates, and varies in size and fulness in the human brain perhaps more than any other part of the cortex. In women it is generally simple and smooth; but in men's brains, especially in those of intellectual persons, this convolution is more developed, more complicated, and considerably longer. Through the greater development of this gyrus, the curve of the interparietal fissure is diminished: it runs in a straight line from behind forwards.

Another peculiarity of the female brain consists in the weak development of the sulci which go on both sides from the anterior portion of the interparietal fissure, while these secondary fissures in the brains of learned men are increased not so much in number as in width.

Nothing characteristic is observed in the brains of murderers and

robbers, as regards the interparietal fissure, so as to distinguish them from the brains of men of low intelligence.

The author explains this difference in the parietal lobe by the assumption that a higher grade of mental activity has for accompaniment an increase of the surface of the brain. The greatest complexity of the folds of the parietal lobe is found in men of great intellectual powers. We must suppose that the cerebral activity which is exerted by these parts must be of a kind connected with the intellectual faculties; for were it a motor or sensory function, the difference in their conformation would not vary according to the vigour of the intellectual powers.

The Results of Removal of Parts in the Brain of New-Born Rabbits.

Dr. C. Monakow has found that by removing a limited portion of the brain in new-born rabbits, he can cause atrophy in other parts ("Archiv." Band XII., Heft 2 und 3).

He gives the result of his researches as follows:—

1. After extirpation of circumscribed regions of the cortex in new-born rabbits, some tracts dependent upon them become atrophied, and that without reference to their physiological function.

2. More than one tract stands in connection with particular zones of the cortex.

3. The single nuclei of the optic thalamus, as well as those of the corpora geniculata externa and interna, stand in close connection with definite zones in the cortex cerebri.

4. The corpora geniculata externa and interna are analogous structures, like the nuclei of the optic thalamus, and should be viewed as belonging to the latter structure.

The Empirical Theory of Vision.

("Neurologisches Centralblatt," 1 Februar, 1882.)

Professor H. Schmidt-Rimpler operated on a boy who had lost his sight at the age of two years and four months, and who had remained blind a year. His vision having been previously good, he had learned to distinguish many surrounding objects. On regaining his sight, it was found that the child had quite forgotten the appearance of things and the estimation of distances. He had to feel objects before he recognised them. After practising for three days, his power of recognising objects and calculating distances began to improve. The child now walked without stumbling, but still only recognised a few things, and was soon wearied with the perplexing effort to adjust his visual to his tactile impressions. The author declares these observations are incompatible with the views of Herbert Spencer and Dubois-Reymond on our mental relations to space. If the power of interpreting the impression of sense is truly not present in the new-born infant, but grows with the growing mind, as several ideas appear in a certain

time of life, it would be impossible that these faculties once developed should be altogether lost. One can only unlearn or forget what one has learned or committed to memory through his own intellectual exertions.

A New Aesthesimeter.

Dr. Buch, who has been busy for two years at a work on the sensibility of the skin, has invented a new instrument for measuring the degree of pressure that may be applied without exciting pain. It is considered superior to that of Bjornstron, inasmuch as the pressure is applied directly to the surface, and there is no need to gather up a fold of skin, which cannot be done on regions where observation is desirable, such as the scalp, the palm of the hand, the finger, or the sole of the foot. There is a description of the instrument, with an engraving, in the "Centralblatt für Nervenheilkunde," 15th August, 1881.

Munk's Visual Centre.

Dr. Munk ("Centralblatt für Nervenheilkunde," 1 September, 1882) has renewed his experiments on a number of monkeys. He has extirpated the gyrus angularis in six of these animals without producing hemiopia or amblyopia. Where only a passing hemiopia resulted from lesion of the occipital lobe, he thinks that too limited a portion of the cortical matter must have been removed. At first there would result a more or less observable amount of blindness, owing not only to the loss of the portion removed, but also to the injury of the surrounding parts, and the residual deterioration of vision might easily escape detection. He thinks that, where hemiopia has resulted from removal of the gyrus angularis, the inflammation must have extended backwards to the occipital lobes or to the fibres which connect the occipital lobe with the optic ganglia. He says that there is a band of fibres running from the occipital lobe forwards and outwards under the superior corner of the gyrus angularis, which, if injured, causes hemiopia on both sides.

Munk holds that the lateral half of the visual area is in connection with the retina of the same side and the mesial or inner half with the retina of the opposite side, and that the optical meridian of the decussating and non-decussating portions of the retina runs through the middle of the macula lutea. On the right of this line the retina is in connection with the right hemisphere; on the left side of the line, with the visual area of the left hemisphere. The side of the retina which goes to the hemisphere on the same side is much larger in the monkey than in the dog. After many failures he succeeded in removing the outer half of the visual area in the left occipital lobe, and the inner half on the right side, and likewise managed to keep the monkey alive long enough to note the result. The animal was almost blind with the left eye, seeing only a very little with the outer side of the left retina; but the sight of the right eye was unaffected.

In four experiments he removed the lateral half of the convexity of the occipital lobe, taking the sagital line as the boundary; and this in every case produced hemiopia of the eye on the same side without any injury to the opposite eye.

He concludes, from some experiments, that in the monkey the portion of the visual centre in functional relation to the macula lutea extends widely over the convexity of the occipital lobe, and that the portion corresponding to the fovea centralis lies in the posterior half of the convexity of the lobe.

Professor Fürstner, at the meeting of Neurologists in Baden-Baden, on the 21st May, 1881 ("Centralblatt," 1 Sept., 1881), made a demonstration of the brain and spinal cord of a patient afflicted with congenital malformation and secondary disease of the brain and spinal cord. The frontal lobe was much affected, especially the third convolution. This patient had never been aphasic, but was left-handed. The spinal cord was divided into two at the dorsal region; higher up into many portions. The patient had worked in diving-bells, which is supposed to have induced secondary disease.

Professor Fürstner also gave the result of his experiments on the influence of lesions of one side of the medulla oblongata upon the development of the hemispheres in new-born dogs. In opposition to the results of Munk and Vulpian, he failed to produce in fifteen experiments any atrophy of the opposite occipital lobes. In ten of these dogs, however, there was a diminution in size which extended from the extremity of the occipital lobe to the spot where the second parietal lobe passes into the gyrus post-frontalis. The diminution was most marked at this very point. In four dogs there was no difference in the size of the hemisphere; in one the diminution in size was on the same side as the lesion. The examination of the tissues with the microscope led to no result.

The Auditory Centre.

Dr. Munk, in a communication which he made to the Berlin Academy of Science (quoted in the "Centralblatt für Nervenheilkunde, 1 August, 1881), places the auditory centre in that portion of the temporal lobe below the visual centre and above the gyrus hippocampi, always excepting a piece of the fourth outer convolution near the fissure of Sylvius. After destruction of this area on both sides there is deafness, and in a few weeks after the dog ceases to bark or whine, just as it does if the apparatus of both ears is destroyed. If the auditory centre is extirpated, and the internal ear on the same side is also destroyed, the animal becomes deaf, and soon dumb. This shows that the peripheral apparatus of each acoustic nerve is connected with the brain on the opposite side, so that each auditory centre is exclusively connected with the opposite ear.

Munk has also sought to find out if the different regions of the auditory centre have the same physiological function. He has arrived

at the conclusion that the anterior part of the auditory area is used for the perception of the high notes, the posterior part for the deeper tones, and that the usual hearing of the dog is connected with the under part of the auditory centre.

The Overtasking of Pupils at Schools.

In the "Zeitschrift," xxxviii. Band, 2 und 3 Heft., Dr. Snell brought before the Association of Alienist Physicians of Lower Saxony and Westphalia the question of the overtasking of the pupils of the higher schools. He gave three examples of injury which scholars had derived from over-exertion. The first of these, a boy of 17, had suffered from diphtheritis, which made him lose ground with his class, so that he redoubled his application in order to regain it. In the end he became sleepless, complained of persecution, and at last became maniacal, but soon calmed down, though it was above a year and a half before he could be dismissed as cured. Another lad had been the dux of the gymnasium. He had no hereditary tendency to insanity. He was believed to be of only moderate capacity, somewhat nervous, liable to indigestion, but docile, religious, and very hard working. He showed heaviness and apathy alternating with excitement, brooded over his condition, talked with contempt and hatred of the discipline of the school, and the conceited pedantry of the teachers, and tried to prevent his younger brothers being subjected to the same system. Though there were explosions of fury, the general character of his insanity was towards apathy. There were delusions and diseased sensations, with the character of persecutions. He was 18 when he became insane. His recovery is not yet recorded.

The third was a boy of 16, also dux at a gymnasium, who had two aunts with abnormalities of character, but no wise insane. He had great capacity and emulation. He worked very hard at school, and at last passed into a condition of maniacal excitement, with intervals of rest and occasional fits of cataleptic rigidity.

Dr. Snell considers that the mental strength of young people is often overtasked at the higher schools, and refers for support to the work of Dr. Petermann, who advocates a thorough reform of the school system in Germany. The result of the existing system he considered to be a culture of superficial character with a tendency to overwrought brain, nervous weakness, and sexual irregularities.

Dr. Wahrendorff referred to the overweening importance which each teacher gave to his own subject, without allowing for the relative importance of other branches of knowledge. It was mentioned that the subject had been discussed at the International Congress at Brussels. Complaints of the overburdening of scholars had come from Sweden, Belgium, France, and England.

Dr. Burghard had found the bad effects of examinations more frequent with girls than with boys, especially with female teachers at the higher normal schools. It was proposed by some of the speakers

that there should be examinations of the scholars to ascertain whether they were capable of higher instruction, that is, I suppose, a new and earlier examination should be added, to ascertain whether the pupils should be allowed to work for another examination at a later date. In this case the object would be best attained by excluding the docile and diligent pupils, and then the duller and lazier ones would not be compelled to work so hard in the race for competition.

Disorders and Deficiences of Speech in Children.

R. Coën ("Archiv für Kinderheilkunde," 2 Band, 8 und 9 Heft, 1881, quoted in the "Centralblatt," 15th October, 1881) has studied 110 children of from three to 14 years of age, who were troubled with disorders of speech. Of these 54 stuttered; 20 stammered; 13 had lisping, snorting, or other peculiarities of utterance; 23 were affected with alalia idiopathica, which he defines as a congenital incapacity to form articulate sounds in contradiction to acquired aphasia. Of the children so affected, 12 were boys, and 11 girls. The youngest was three years and a half; the oldest ten. They were mostly healthy, blooming children, presenting no outward visible symptom, with good hearing, and no trace of paralysis or abnormality of the head or body. The affection seemed to be inherited; more rarely it was due to traumatic or mental influences. Dr. Coën thinks that the deficiency was due to the incomplete development of the motor centres of the muscles of the vocal apparatus, or to interruption of the centrifugally conducting tracts.

Porencephaly.

In the "Centralblatt" (1 Dezember, 1881) there is a review by Dr. Müller, of Graz, of a monograph by Kundrat on Porencephaly, a deficiency of the outer wall of the hemisphere which penetrates more or less deeply, so that in pronounced cases the subarachnoid space communicates with the lateral ventricles. The space is generally filled with clear serum. Kundrat has collected 32 cases (that of Mierzejewski mentioned in our Russian Retrospect, 1882, is not given). To these Kundrat has added twelve of his own. Porencephaly is not always congenital, but may be caused after birth by a destructive lesion of the cerebral matter between the ventricles and the surface of the hemisphere. One example is given in fuller detail. A woman of sixty-three at her death had been, eighteen years before, suddenly seized with hemiplegia of the right side and aphasia. There was some improvement in the condition of the lower extremity; but the paralysis of the arm persisted, and there was contraction at the elbow and the fingers. During the illness there were epileptoid attacks, which at first returned every four or six weeks, but in course of time became less frequent. A year after the paralytic attack she began to learn again to speak like a child. During the last years of her life she became subject to amnesic aphasia. She died in the hospital of

inflammation of the lungs. On examination it was found that the cranium was thicker, by from five to six millimètres on the left frontal region than on the right. There was a deep depression or pit in the brain substance in the region of the island of Reil, bridged over by the thickened arachnoid membrane. This cavity was caused by the destruction or contraction of the extremities of the third frontal, the median gyri, and the first temporal. The left hemisphere was somewhat smaller than the right through the flattening of its convexity over the depression. The nucleus lenticularis and the optic thalamus of the left side were in great part destroyed; and there was degeneration of the left crus cerebri, left side of the pons, the anterior pyramid, and of the right lateral column of the cord.

Kundrat enumerates four forms of porencephaly in their order of frequency.

I. Porencephaly through arrested development.

II. Through alterations after the parts have been normally developed.

III. Connected with hydrocephalus.

IV. From cicatrization.

The fourth form is very rare. As regards the situation, he finds eight acquired, and nineteen congenital cases in the parts supplied by the artery of the Sylvian fissure; four, all congenital, in the region of the anterior cerebral artery; and five, two acquired and three congenital, in that of the posterior cerebral. Sixteen of the cases were males, and twenty-four females. Of eighteen born with porencephaly only three lived beyond the period of infancy. When the porencephaly dates from intra-uterine life, the gyri radiate from the depression as from the cup of a wheel. While the arachnoid bridges over the cavity, the pia mater descends to line the walls down to the ependyma of the ventricles. This malformation seldom supervenes earlier than the fifth, generally from the sixth or seventh month. In the acquired form the pit is hollowed out by the destruction of the substance of the gyri; the pia mater does not cover its walls, which are formed simply by the altered cerebral substance. The ganglia at the base of the brain are in many cases stunted in development on the defective side; in some instances they have entirely disappeared. There is sometimes want of symmetry in the form or arrest in the growth of the cranium. The clinical symptoms vary according to the extent and situation of the deficiency, as well as the period in which it has been produced. Idiocy, though not a constant sequel of congenital porencephaly, is commonly present, in most cases accompanied by mutism.