through the portion surrounding the brain down to the bottom of the basin, in a complete ring round the organ. Place the basin and contents into cold water; the paraffin sets hard. Now remove from the water, and turn out the brain, covered by its paraffin cap, using a strong scapel for the purpose. By a little shaking the cap can be separated from the brain; from its inner aspect numerous ridges and processes are seen projecting; these correspond to sulci. By this means a mould of the brain is obtained. Fill this mould with good plaster of Paris, made up to the usual consistence of a cast with water. When the plaster is thoroughly set place the whole in water in a saucepan, and heat. The paraffin melts away, leaving a cast of the brain. The convolutions and sulci are well mapped out; the under surface is quite flat. Any little holes—sometimes such are seen, 1-2 mm. in diameter—may be filled up with plaster. Expose the cast to a gentle heat to dry it. Subsequently it may be painted of the same tint as a Giacomini preparation. Abnormal disposition of gyri, difference in size of hemispheres, local atrophy and depressions, gaping sulci, and other lesions may be represented by this method with accuracy. Good fresh sections may be obtained from brains which have been subjected to this process provided they were not notably softened beforehand.

(To be continued.)

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3. *German Retrospect.*

By W. W. Ireland, M.D.

On the Influence of Diseases of the Ear upon the Development and Course of Insanity.

The following is taken from a *resumé* of Dr. Bjeljakow in the "Wjestnik Psych." (viii. Jahrgang, Heft 2), as given in the "Allgemeine Zeitschrift für Psychatrie" (xviii. Band, 1 Heft). Dr. Bjeljakow, who has studied the subject in a hospital of St. Petersburg, has confined his observations to cases where there was distinct inflammation of the middle ear. Out of 135 post-mortem examinations which he made during four years 17·12 per cent. suffered from internal otitis. Of these one of the patients had melancholia, one paranoia hallucinatoria acuta, eight paranoia hallucinatoria chronica, two secondary dementia, three epileptic insanity, four general paralysis, one acute delirium, one senile dementia, and three hebephrenia. The author, at the end of his paper, gives the following conclusions:—

1. An inflammatory process of the internal ear is frequently the cause of mental derangement, especially of insanity accompanied

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by hallucinations. If the local inflammatory process take an unfavourable course the insanity often passes into secondary dementia, which, otherwise, this form of insanity is not so liable to do.

2. One-sided hallucinations of hearing are very frequently the result of a heightened excitability of the cortical centres, the result of the transmission of the irritation from the auditory nerves.

3. Hallucinations of hearing on both sides, which support the hypothesis of the independent function of each hemisphere, may be caused through disease of the auditory apparatus.

4. Irritation of the organ of hearing frequently does not stop at exciting hallucinations of hearing, but as a result of the influence of this sense upon the others, it also excites other hallucinations, especially those of taste, smell, and general sensibility. The character of the delusions of the senses is tinged by the personality of the patient.

5. In many of these patients, who suffered from ear disease, there was found a hyperæsthesia of hearing, which, as a sequel to noises or musical sounds in the ear, becomes changed into a diseased sensation. At the same time the sensibility to hearing outward sounds is not increased, but, for the most part, diminished.

6. The overflow of saliva, which often accompanies suppuration of the middle ear, is caused by irritation of the chord and the nerves of the tympanic plexus. The hypochondriac depression and pain about the præcardium, which from time to time trouble these patients, may be explained through irritation of the nervi vagi of the auricular branch, and the propagation of this irritation to the auditory brain centres.

7. The connection of disease of the ear with insanity accompanied by hallucinations is only observed in cases where mental activity and apprehension are not yet much diminished.

8. Epilepsy seems sometimes to depend upon disease of the labyrinth. The irritation, coming from inflammation of the middle ear, may assume the form of a false general paralysis.

9. Hallucinations of hearing, though rare in general paralysis, may, when they appear, be the result of otitis on one side. In this case the hallucination is generally confined to the same side of the brain.

Unilateral Hallucinations.

Professor Pick, of Prague, records a case ("Neurologisches Centralblatt," No. 11, 1892), which closely resembles one already published by Sir Henry Holland in his "Medical Notes and Reflections." An epileptic had an attack of paresis of the right extremity, and aphasia with lateral homonymous hemiopia. Cutaneous sensibility was much diminished. On recovery from

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some disturbance of consciousness it was ascertained that not only was there motor aphasia, but also word deafness. On the third day these symptoms had considerably abated. The patient became restless, struck the bolster, and said that someone from below cried into his ear, "Senat, Senat." The man, whose speech was Bohemian, did not know the meaning of this word. A little after he heard incessantly the word "Prosto, prosto." This also had no meaning to him. In a few hours these hallucinations ceased, but the patient remained unquiet. Nearly two months after this the patient again had a paralytic attack implicating the right arm and right side of the face accompanied with loss of sensibility. He again became affected with sensory and ataxic aphasia with right hemiopia. In three days this disorder of speech had, in a great measure, abated, when there were hallucinations of hearing. He said that there had been a row since the morning, and that a dog had been howling. These visions seemed to come from the right. After three days they passed away along with the remaining traces of the disorder of speech. It is here to be noted that the hallucinations were on the right side, although the paralysis of the limbs indicated disease of the left hemisphere. A month after the patient had an attack in which this succession of symptoms was repeated, but the increasing weakness of the patient prevented the case being carefully studied.

The next case described by Professor Pick was a woman of 58 years of age subject to delusions with intercurrent attacks of epilepsy. She heard voices in the right ear which conveyed threats or remarks about what she did. If the ear was stuffed with wadding only an indistinct murmur was heard; but whenever the wadding was removed the voices returned. No voices were heard in the left ear, in which the sense of hearing was dull. On examination the left auditory meatus was found to be full of hardened wax, and on this being removed the voices were heard in the left ear also.

In this last case described by Dr. Pick auditory hallucinations confined to the left ear were found to cease when the ear was stopped.

On the Theory of Hallucinations.

Dr. Tigges begins a thoughtful paper on this subject in the "Allgemeine Zeitschrift für Psychiatrie" (xlviii. Band, 4 Heft) by observing that the fundamental condition in hallucinations is an increased excitability of the sensory centres in the cortex. These centres are roused by a stimulus which, in ordinary circumstances, is inadequate. Most authors now place the seat of hallucinations in the cortex, but some, as Hagen, Kahlbaum, and Schüle, still place them in the lower cerebral ganglia, a view also upheld by Meynert.

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Petersen has described the case of a young man who suffered from delusions of persecution. He heard voices only in the right ear, and had hallucinations of sight, visions of men and skeletons upon the right half of the visual areas of both eyes. These never passed across the vertical line of separation, and when the patient turned his head towards the light the hallucinations followed him. Petersen regards this as undoubtedly a central hallucination caused by lesion of the occipital and temporal lobe, nevertheless it followed the movement of the eyes. Dr. Tigges adds an instance where a voice heard on the left side ceased when the ear was stopped.

He asks the question whether there can be a centrifugal excitement or stimulation where the lesion lies in the cortex? Dr. Tigges cites Jolly's observations, who found, on applying the constant current to the auditory nerve, that in four or five persons subject to hallucinations of hearing there was an increased irritability of the nerve with paradoxical reaction, that is, the opposite ear was affected instead of the ear to which the electric current was applied. Dr. Tigges found a similar result, but only in cases where there was organic affection of hearing.

Insanity following Multiple Neuritis.

Doctors Korsakoff and Serbski (Gesammelte Abhandlungen, Moscow, 1890, quoted in the "Allgemeine Zeitschrift für Psychiatrie," xlviii. Band, 3 Heft) have described a case of this form of insanity. The patient was a woman twenty-seven years old. She had an extra-uterine pregnancy for which laparotomy was performed, and a putrefying fœtus was removed. A week after this operation the mental derangement appeared. There was great excitement, weakness of memory and clouded consciousness, associated with general weakness of the extremity, loss of the patellar reflex, and pain on pressure on the nerve trunks and muscles. There was fever with small pulse. The disease lasted two months and ended with death. The mental derangement showed all the characteristic symptoms which Karsakow had already assigned as symptoms of the polyneuritic psychosis.

On examination after death there was found a widely diffused degenerative neuritis implicating the nerves of the extremities as well as the vagi and phrenic, and, in part, the cranial nerves. There was an alteration in the size and form of the spinal canal which was thought to be congenital and not connected with the insanity. In the columns of Goll the neuroglia was found to be increased, no alteration was noticed in the brain cortex. There was colloid degeneration of the thyroid gland.

This case goes against the view of Tilling, who holds that the polyneuritic psychosis is only found after alcoholic neuritis, whereas Korsakoff has observed it to follow every species of toxic polyneuritis.

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Another Case of Psychosis Polyneuritica.

At a meeting of the Psychiatrischer Verein of the Rhine Provinces, held at Bonn ("Allgemeine Zeitschrift für Psychiatrie," xlviii. Band, 1 Heft), Dr. Brie described at length another case of this new form of insanity. He began by observing that some impairment of the intellect, and especially of the memory, had been long noticed in drunkards suffering from multiple neuritis, but it is to Dr. Korsakoff that the merit is due of having directed attention to a type of insanity which is characterized by a peculiar disorder of the memory combined with multiple neuritis, afterwards passing into stormy mental excitation. This has been styled *psychosis polyneuritica* or *cerebropathia toxæmica psychica*. Korsakoff considered this mental affection is caused by various toxic agents as well as by alcohol. In the case described by Dr. Brie the characteristic mental symptoms appeared without any abuse of alcohol. The patient was a man of thirty-four years of age, free from hereditary disease, and who had previously enjoyed good health. About eight years before he set up a grocer's shop in Bonn. After the death of his wife, who assisted him in his business, he turned hard and suspicious. At the Whitsuntide of 1889 he became ill with persistent vomiting and diarrhœa, by which he was much prostrated. He was troubled with double vision, and in July of the same year his memory began to fail. He soon got so weak in the legs that he could scarcely stand, and on the 7th of October was received into the asylum at Bonn. He was found to have paralysis of the abducens of the right eye with nystagmus; the fundus of the eye was normal. He could not turn himself in bed without great exertion, was quite unable to walk, and very helpless. The legs were kept bent at the knee. The patellar reflex was wanting, and there was pain on pressure over the muscles. There was weakness of the arms on pressure; cutaneous sensibility and excitability to the electric current were found to be diminished. The pulse was 120 in the minute; the appetite very poor. There was much loss of memory. He told silly fables about himself, which varied from day to day. He could not remember what had happened to him a few days before, was surprised on being told where he was, and then forgot it again. He called the physicians and attendants by strange names. Towards the end of October the patient was seized with distressing symptoms which indicated an affection of the vagus and phrenic nerves. He felt faint, was restless in his bed, had a great difficulty in breathing, and had a cyanotic appearance. These symptoms got worse and better till the end of December, when his mental condition improved, his memory began to be stronger, and his judgment more correct. During the six months which had elapsed before Dr. Brie read his papers there had been

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considerable improvement in the patient's mental condition. The memory had gained strength, and he described himself as having passed through a dream. But the legs were contracted, he walked with difficulty, and only with the assistance of his hands; sensibility was still deficient; the patellar reflexes had not returned, and there was pain on pressure being applied to the muscles.

Dr. Brie observes that in this case there was no known constitutional disease, nor poisoning with alcohol, lead, or arsenic. He is disposed to think the toxic agent was connected with the continued intestinal disorder.

Peripheral Neuritis in the Course of General Paralysis.

Dr. A. Pick ("Berliner Klinische Wochenschrift," No. 47, 1890) describes the case of a man whose mother was insane, and who was imbecile from birth. At the age of twenty-two years he was visited with the characteristic symptoms of general paralysis, delusions of grandeur, stuttering in his speech, twitching of the tongue and muscles of the face, and sluggish action of the pupils to light. During the course of his illness, after he had become confined to bed, there was paralysis of the peronei muscles which disappeared after several months, and was succeeded by spastic rigidity. Professor Pick regards this as an undoubted peripheral paralysis of the nerves occurring in the course of the general paralysis. After death the usual lesions were found in the membranes, with atrophy of the brain substance, and widening of the lateral ventricles.

Dr. Pick adds another case of the kind in a woman 38 years of age, who suffered from headaches and paralytic attacks which ended in mania with delusions of grandeur. There were characteristic motor disturbances with progressive diminution of intelligence, the ideas of grandeur still persisting. In this case also there was a sudden paralysis of the peronei muscles. Dr. Pick believes this complication also to be the result of peripheral neuritis.

PART IV.—NOTES AND NEWS.

MEDICO-PSYCHOLOGICAL ASSOCIATION.—QUARTERLY MEETING AT LIVERPOOL.

The Quarterly Meeting of the Medico-Psychological Association of Great Britain and Ireland was held on Thursday, 9th March, 1893, at the Medical Institution, Mount Pleasant, Liverpool. Dr. Baker, of York, President of the Association, occupied the chair, and amongst those present were Drs. Clouston, Hayes Newington, Richards, Bonville Fox, Savage, Conolly Norman, Bullen,

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