

PART III.—PSYCHOLOGICAL RETROSPECT.

1. *German Retrospect.*

By WILLIAM W. IRELAND.

In addition to the works quoted in the Journal for January, 1880, p. 576, the following periodicals have been used in making the German Retrospect :—

"Archiv für Psychiatrie und Nervenkrankheiten," ix. Band, 2 und 3 Heft, und x. Band, 1 Heft. Berlin, 1879.

"Allgemeine Zeitschrift für Psychiatrie," xxxv. Band, 6 Heft, und xxxvi. Band, 2 und 3 Heft. Berlin, 1879.

"Jahrbücher für Psychiatrie," 1 und 2 Heft. Wien, 1879.

"Centralblatt für Nervenheilkunde, Psychiatrie und Gerichtliche Psychopathologie." Coblenz. Numbers from June, 1879, to 15th January, 1880.

"Der Irrenfreund," Numbers 8, 9, 10, 11, and 12. Heilbronn, 1879.

On the Origin of the Internal Carotid.—Dr. Otto Binswanger ("Archiv.," 2 Heft, ix. Band) publishes observations upon this subject in prosecution of the researches of Dr. L. Meyer and Dr. Schäfer. Dr. Meyer pointed out a tendency to degeneration and dilatation of the internal carotid, as the commencement of its course in 31 cases of the insane, and Schäfer observed that these changes were not peculiar to lunatics, but were to be found in bodies of people of all ages who had died of various diseases.

Dr. Schwalbe, of Jena, has also paid special attention to the anatomical relations of the division of the carotids and the first part of the trunk of the internal artery, and come to conclusions similar to those of Dr. Binswanger. This pathologist has examined the carotids in two hundred cases. He calls attention to the two ways in which the carotid divides into its external and internal branches. Either both vessels come off as if the main trunk branched equally into two, or the external carotid holds on the course of the common carotid, while the internal goes off at nearly a right angle, and takes a bow-shaped course backwards and inwards.

He found that the internal carotids had a bulbous dilatation in almost all grown-up people.

It was difficult to reduce the enlargements to any rule, but their form seemed to have some connection with the method of division of the common trunk, and also with the origin of the upper thyroid artery. Sometimes the enlargement commences with the common trunk, and is extended into the two arteries; sometimes it begins with the internal carotid. The bulbous enlargement is not observed till the first year of life. It may be regarded in a certain sense as a pathological appearance. Since it constitutes a weak point in the

artery, and under unfavourable conditions is enlarged by the degeneration of the middle coat into an aneurism.

On the Function of the Spinal Cord.—Professor Schiff, of Geneva, who has been studying the spinal cord for twelve years, made an exposition at Baden-Baden of his methods and his conclusions. The abstract, which appeared in the “*Centralblatt für Nervenheilkunde*” (15th November, 1879) was communicated by himself.

The description of his method of research is too long for our space and cannot be condensed. His preparations show the great difficulty, and many sources of error, of the attempts to effect cross-sections of the cords in living animals, so as to spare particular cords and not to injure the grey matter. It is necessary also to avoid confounding the result of the bleeding following the sections with those of the solution of continuity of the nervous substance.

It is also very important to keep the animals alive long enough to be able to distinguish the permanent from the immediate effects of the section.

He found that when in dogs the separation of the continuity of all the columns of white matter was effected about the last dorsal vertebra, the hind legs appeared for the first few hours to be paralysed, and to have lost sensation, or only a trace of feeling remained; but by-and-bye the sensibility to pain returned, and when the posterior columns were left entire, the sensibility to touch and voluntary movement of the hind legs and tail also came back. The movements were somewhat uncertain, but did not fail in any joint, and the feeling of pain was complete.

Even when the grey substance was more or less injured, the power of motion and feeling returned, and Dr. Schiff regards it as an established result that the sensibility and voluntary motions of all parts of the posterior extremities are maintained if a very small portion of normal grey substance remain entire. If a cut be made a centimetre above or below this narrow isthmus of grey substance the conduction of nervous influences is still maintained. The conducting isthmus may be in the middle or in one of the side halves of the cord; but if the isthmus be very narrow, and consists of the lateral extremity of the grey horns, sensibility is only maintained in one side of the body below the section.

Dr. Schiff rejects the views of those who hold that the fibres which diverge from the grey substance consist only of connective tissue. His observations confirm the views of Stilling that these fibres are nervous processes which ramify outwards and then return to the grey substance. It is by overlooking the structure of this nervous sling that some experimenters have concluded that they had no more to do with the grey substance when they had cut through its central part, and hence they concluded that feeling was conducted through the lateral columns alone. If we do not distinguish in vivisection between the feeling of touch and that of pain, and fail in recognizing the retardation of the conduction of sensibility, we might fall into the

error that all sensation is conducted through the lateral columns, and thus create a source of discord between pathological observation and physiological experiment. He regards it as very probable that the longitudinal white fibres of the antero-lateral columns do not conduct any sensory impressions to the brain and only serve for voluntary motion. Dr. Schiff states that he has succeeded in destroying, about the level of the first lumbar vertebra, the whole of the grey substance, including the lateral horns, leaving the continuity of the antero-lateral columns uninterrupted. In these cases there were still voluntary motion of the hind legs—at least, above the knee; but all sensibility, even for the strongest interrupted currents, transmitted through transfixing needles, was completely and finally lost if the posterior columns were cut.

Condition of the Eyes during Sleep.—Dr. Ludwig Plotke ("Archiv." x. Band, 1 Heft) has made renewed investigations upon the position of the eyes during sleep. The old view was that the eyes were directed upwards and inwards, and the pupils contracted. Rähmann and Witkowski found that the visual axes were not always convergent during sleep, that the eyes took various positions, and that the pupils do not alter with the movement of the eyes. They found that the pupils contract most when the sleep is deepest, and that even in profound sleep light causes the pupils to re-act just as in the waking condition. Touch and sounds caused the pupils to dilate even when light was directed upon them. The pupils widen before full consciousness is re-established in the mind of the subject. On the other hand, Sander observed no movements of the eye during sleep.

Dr. Plotke has examined the condition of the eyes during sleep in about 500 inmates of the Poorhouse at Breslau. He found that children were the best subjects, as they were less apt to awake when the eyelid was raised than grown up people. The following are the principal of his conclusions: The pupil is contracted during sleep—the deeper the sleep the more contracted it is. When light falls upon the eye the pupil contracts; it contracts less when the sleep is deep, and when the sleep is very profound it does not re-act at all upon the stimulus of light. The pupil dilates when excitation is applied to the auditory or sensory nerves, and all the more readily the less deep the sleep is. At the moment of awakening the pupil dilates most widely, and is not prevented from so doing by a bright light. The contraction of the pupil during sleep is owing to the activity of the sphincter muscle of the iris; the dilatation is either owing to direct inhibition or suspension of that activity. He found that when the iris was dilated by atropine it still contracted during sleep, though it did not become so narrow as in the other eye to which no atropine had been applied. The cornea in sleep becomes dull, probably on account of the almost entire cessation of the movements of the eyelids, for in sleep the eyelids do not entirely cease to move, but when they do so their motion is often independent of one another.

Crania Progena.—Dr. Fraenkel (*Zeitschrift xxxvi, Band, 2 and 3*

Heft) gives the results of his inquiries after Crania of this kind in the Asylum at Bernberg. People with this peculiarity have the lower jaw so elongated that the teeth either protrude beyond those of the upper jaw, or rest permanently opposite to the upper row. The cases already described by Meyer were either idiots, or had some deficiency dating from childhood. Dr. Fraenkel met with 24 cases out of 140, of whom few were idiots; but eight were epileptics; four general paralytics; and four were affected with *mania a potu*. Other deformities were noticed to accompany that of the lower jaw, especially a strange shape of the outer ears, flatfootedness, abnormal narrowness of the palate, and squinting.

The Cranial Capacity of the Insane.—Dr. Meynert has made a number of careful craniological studies on 128 skulls of lunatics who had died in the General Hospital at Vienna. He found that the capacity both of the male and female skull in lunatics is greater than that of the normal skull, but that this superior cranial capacity was not accompanied by a greater brain weight. ("Jahrbuch für Psychiatrie," 11 Heft. 1879).

Insanity in Childhood.—Dr. Kelp, in an article upon Insanity in Childhood ("Irrenfreund," Nr. 8. 1879), describes the following two cases:—

A girl of ten years of age, after an attack of general convulsions, fell into a cataleptic condition, in which she remained stiff and immovable in one position, and muttered unintelligible words, which bore upon objects of which she was casually thinking. At other times her condition changed from excitement to rigidity and depression.

A girl, eleven years, suffering from epileptiform attacks, heard during them a deep voice calling on her; then another quite different one followed, which made itself heard for hours at a time, only sometimes interrupted by the first, which kept up the conversation. The second voice represented a wholly different person. All the questions were rightly answered in connection. The voices of the good and evil spirit spoke to one another. While the last was speaking the features of the girl took a wild, demoniac expression. The patient recovered as a voice cried, "Go out of this girl, thou unclean spirit."

Changes of Temperature in General Paralysis.—Dr. Croemer records in an article of above fifty pages in the "Zeitschrift" (xxxvi. Band, 2 and 3 Heft) his observations on the changes of temperature of patients affected with general paralysis. He believes that the curves of temperature of a patient suffering from this disease are so characteristic that one might indicate its existence from a carefully compiled table of the varying temperatures.

He describes three forms of general paralysis. In one of them the maniacal disposition is prominent, and meningitis is the prevailing morbid process; another form is of a melancholic character, and apoplectic lesions may be expected; and in the third there is great mental obtuseness, and atrophy of the brain is observed. In the first

form, the maniacal, the temperature is generally higher, but there are great rises and falls during the day.

In the melancholic form the temperature is lower, and there are fewer rises and sinkings and daily variations. In the third form the temperature never rises high nor falls low till the period of sinking, when a declining temperature indicates the near approach of death.

Dr. Croemer found that :—

1. As a rule the temperature of general paralysis is lower than that of healthy patients, and indeed lower than in other diseases

2. The curve of temperature rises and falls daily. The variations are less marked when the mental condition is quieter. They oscillate up and down in the melancholic and fatuous form of general paralysis. Where the difference of temperature is great from day to day we have the paralytic attacks, whether accompanied with epileptiform convulsions or temporary excitement characterised by mental disturbance and restless movements.

3. Towards the last stage of paralysis the temperature becomes higher, it then sinks. This implies the appearance of extensive paralysis coming and disappearing.

4. Paralytic attacks are always accompanied by a rise of temperature. The greater the intensity of the convulsions the greater the rise of the thermometer.

As a rule the temperature is low before the attack, and sinks lower in the first few minutes. This is regarded as an evidence of the irritation through which the fits are excited.

5. In those patients in which the paralytic appearances are severe the general temperature is high. The same holds good in those cases in which there is paralysis of the vessels with stagnation of the circulation. The author concludes with a list of the most recent contributions to the thermometry of the nervous system, which has appeared in Germany and France.

The Changes in the Brain and Cord in Hydrophobia.—Dr. O. Weller ("Archiv für Psychiatrie," 3. Heft, ix. Band) observes that till within recent times no lesions had been observed which could explain the terrible symptoms of hydrophobia. In text books on pathology, published but three years ago, the only morbid alteration described as following this disease was hyperaemia of the brain and its membranes. Even original observers like Forel and Schultze, who had examined the bodies of men and dogs that died of hydrophobia, stated that they found no change in the central nervous system.

Dr. Moritz Benedikt, of Vienna, seems to have been one of the first to indicate the peculiar lesions in hydrophobia, or lyssa, as it is called by the Germans and Italians. His results are thus summed up by Dr. Weller :—

1. There was hyperaemia and widening of the vessels, and extravasations with deposits of red and white corpuscles in the surrounding tissue.

2. There was effusion of lymph in the tissue of the brain, and

little hyaloid abscesses arranged in a racemose manner in the substance of the brain, and granular disintegration of the nervous substance, with little spots of pigment girding round the vessels. Similar alterations in the brain were described by Kolesnikoff and Wassilief; and Gowers and Cheadle discovered hyperæmia and extravasations in the pons and medulla oblongata.

Dr. Weller has himself examined seven brains and spinal cords of people who died of hydrophobia in the epidemic at Zurich: his preparations were subjected to a careful chemical and microscopical preparation both in the fresh and hardened condition. He found hyperæmia visible to the naked eye in the brain and pia mater; but the congestion was greatest in the medulla oblongata and spinal cord. Extravasations of blood were also seen under the microscope, and the vessels were shown to be surrounded with a lymphoid effusion. Dr. Weller describes, scattered amongst the effusion of lymph, masses of yellow fatty matter, which are very well represented in a coloured lithograph. They are circular, oval or polygonal bodies reflecting light strongly, and with a sharp outline and colour, varying from pale yellow to golden. Their size varies from 0.0015 to 0.01 of a millimetre. They are unaffected by acids or weak alkaline solutions, but are slowly transformed by alkalis and are promptly dissolved in ether and chloroform. These corpuscles are found in great abundance in the brain and spinal cord accompanying the vessels and hanging on or about them like grapes on the stalk.

Dr. Weller has never seen any similar products in other diseases of the nervous centres of man or the dog. He has sought for them in cases of myelitis in the dog without success. He therefore feels himself warranted to treat these yellow fatty corpuscles as pathognomonic of hydrophobia. Similar deposits have been described by the Continental writers already cited, but apparently after a less decided fashion.

Dr. Weller sums up his results as follows:—

1. Hydrophobia localizes itself in the form of an inflammation commencing from the vascular system. This inflammation is characterized by exudation around the vessels and infiltration of the tissue sometimes in particular spots and sometimes diffused. At the same time there is observed a peculiar fatty body in the perivascular spaces. This is probably a result of degeneration of the nerve elements.

2. The inflammation is to be regarded as the first stage of an acute myelitis and encephalitis. The process lasts too short a time to allow of it passing to softening as in ordinary acute myelitis, the disease soon ending in death.

3. The short duration of the disease is owing to the part which it more particularly seizes upon, the medulla oblongata and the nuclei of the glossopharyngeal vagus and spinal accessory nerves.

4. In man the morbid processes seem to be confined to the spinal cord and the medulla oblongata; but in the dog the inflammation also affects the brain.

Sclerosis of the Hippocampus Major in Epilepsy.—Dr. Ludwig

Pfleger ("Zeitschrift" xxxvi. Band, 2 and 3 Heft.) has paid special attention to the occurrence of contraction and sclerosis of the cornu ammonis in epilepsy.

While Demonstrator of Anatomy at the Vienna School of Medicine he never noticed a single example of this morbid lesion; but while at the asylum at Ybbs, out of 300 dissections, he saw 23 cases of atrophy with sclerosis, and two of atrophy alone. These subjects were all epileptics; but the lesion was also found in a case of general paralysis and in the brain of an insane and hysterical old woman.

Hemkes stated that the atrophy and sclerosis of the hippocampus was only found in those epileptics who had been seized with fits before they were twelve years of age, and that all these had suffered from some acute or chronic disease of the brain with severe cerebral symptoms. While unable, in many instances, to collect the history of the patient, Dr. Pfleger's own observations tended to confirm the view that where the lesion appeared the epileptic fits were severe and of long standing. The hardening and contraction of the cornu ammonis occurs in about half the epileptics in asylums. He thinks that this lesion is due to derangement of nutrition following on alteration in the manner in which the blood circulates in the head during the epileptic attacks. This, however, does not seem very clear.

Concussion of the Spine.—Dr. H. Obersteiner ("Separat-Abdruck aus den Medizinischen Jahrbüchern," iii., iv. Heft. 1879) gives the result of his observations and enquiries upon this injury. After the spinal region has been subjected to violence or gunshot wounds, or the severe concussion attendant upon railway collisions, the functions of the cords are impaired without any marked anatomical alterations. The principal symptoms are more or less paralysis of the bladder, and rectum. Sometimes the affection is followed by myelitis. In 63 cases collected by Dr. Obersteiner, 20 (31·7 per cent.) made a complete recovery, and 18 died (28·6 per cent.). He thinks the mortality could have been stated as higher had the other cases been longer kept under observation. Recovery often occurs late, sometimes after many years.

The symptoms do not all disappear at once; sometimes the paralysis of the bladder remains after all the rest. The pathological anatomy of the subject has not been thoroughly studied; he thinks the concussion produces some molecular change in the molecules of the spinal cord which may either retrograde to the former healthy condition, or progress to myelitis or degeneration of the cord.

On Combined Primary Disease of the Columns of the Spinal Cord.—Dr. Westphal has sent us two articles on this subject, reprinted from the "Archiv für Psychiatrie" (Band viii., Heft. 2, and Band ix., Heft. 3). The learned professor suspects it to be possible that readers may think his clinical cases reported at too great a length; but he assures them that the thing cannot be helped, and if after this warning they go on reading, why it is their own fault. At any rate, they can look at the illustrations, which are good.

Some of Westphal's cases illustrate the extension of disease of the spinal cord to the lateral columns. When this extension is indicated by the failure of muscular power, or by actual paralysis, there is agreement between the observed pathological lesion and the explanation of physiologists; but unhappily these two classes of observations do not always agree. Drs. Friedreich and Schultze examined the spinal cord of a man who had died of typhoid fever, after suffering from loco-motor ataxia for twenty-three years. There was no real loss of muscular power, except, perhaps, a little in the flexors of the femur, although the antero-lateral columns of the cord were found affected. Dr. Westphal is not disposed to admit that, in this case, the disease of the antero-lateral columns were so far advanced as that of the posterior columns; if it had been so the command of the muscles would have been seriously impaired. In fact, Friedreich found that a greater number of nerve fibres were entire in the antero-lateral than in the posterior columns. But Westphal himself has studied several cases where, in addition to ataxia, there was paralytic weakness of the lower extremities. He points out that along with the atrophy of the muscles, there is also a disappearance of the fatty tissues of the affected limb, and this cannot be attributed either to chronic myositis or to the alteration of the nerve cells of the anterior horns.

Moreover, the excitability of the muscles to electricity and the reflex action still remain. Unfortunately, the spinal cord in these instances were not subject to an examination through the microscope. Dr. Westphal is disposed to believe that the real cause of the diminished muscular power lies in the diminished energy of the motor impulse.

In opposition to Charcot, the Berlin Professor gives us the result of his observations that combined disease of the posterior and lateral columns is not followed by spastic contractions. If the disease of the posterior columns has involved the lower portion of the cord, and those parts of the cord indicated as the deep organs of the spinal nerves, the only lesion found was to the degeneration of the posterior tract. Similar instances have been described by Fürck, Leyden and others. This last observer regards such cases as pseudo-paralysis owing to weakness of nervous power or diminished impulse of the will. He thinks it a confirmation of this view that paralysis bearing this character is commoner with women suffering from ataxia than with men, as women are more disposed to yield to any impediment to locomotion. Dr. Westphal, who does not accept this explanation, starts the question whether the muscular weakness is owing to alterations commencing not in the spinal cord, but in the muscles themselves. He gives, as the result of his pathological observations upon the lesions observed both in those who have suffered from paralysis beginning in the brain, that we never meet with a granular degeneration in the posterior columns of the cord along with a grey degeneration (sclerosis) of the antero-lateral columns, and a grey degeneration of the antero-lateral column is never met with if the posterior column show a granular degeneration. In other words, the

character of the degenerative process, whether granular or sclerotic, is always the same in both columns. Westphal finds that spastic spinal-paralysis, *i.e.*, paraplegia with rigidity, contractions, tremors, and heightened reflex action may accompany a variety of lesions; it may be the result of primary disease of the posterior and lateral columns as well as of sclerosis and inflammation of the cord about the upper dorsal region. It may follow disease of the antero-lateral columns in connection with the disease of the posterior column, if the latter involve the lower parts of the cord. Spastic spinal paralysis may also, as Charcot has pointed out, accompany degeneration of the cord occurring in patches.

Grey Degeneration of the Cord with Disseminated Sclerosis.—Dr. C. Westphal ("Archiv ix. Band, 2 Heft.") describes a case where grey degeneration of the posterior columns of the spinal cord was found to be combined with disseminated sclerosis of the other tracts, as well as the grey substance of the cord. This combination is so rare, that Dr. Westphal claims the honour to be the first to produce an undoubted example, and we must now modify the proposition that degeneration of the cord and partial sclerosis do not occur together. The subject was a man 46 years old at the commencement of the disease, which lasted four years. There was degeneration of the posterior dorsal region and disseminated sclerosis throughout the cord with rigidity of the quadriceps following on passive flexion of the knee joint and absence of tendon reflex.

The man had also fatty disease of the heart, with hypertrophy and dilatation of the left ventricle, and inflammation of the kidneys and bladder.

At the end of his article, Dr. Westphal observes that the statement that the tendon reflex fails in those cases in which the degeneration of the posterior columns has involved the dorsal region even when the lateral columns are also affected, is one of the best-established data in the pathology of the cord.

The Tendon Reflex Centre in the Cord.—Dr. Sanator, of Berlin ("Centralblatt für Nervenheilkund," 15, October, 1879), gives, as the results of his careful experiments, that,

1. In the rabbit and the dog the centre reflex of the tendo Achillis lies in the lumbar part of the cord between the fifth and sixth lumbar vertebra. On section of the cord at this place the reflex ceases.

2. When the posterior columns alone are cut about this level, the reflex phenomenon is still manifest.

3. The phenomenon is scarcely affected by the section of the anterior horns about the same height.

4. It is only when the outer part of the lateral columns are cut between the fifth and sixth lumbar vertebra that the reflex of the tendo Achillis is destroyed. These experiments do not seem to agree with the observations of pathologists in *tabes dorsalis*.

(*To be Continued.*)