

wards cannot be explained by coincidence. The first case of juvenile tabes in literature was described by Hensch in 1876. From that time on numerous cases have appeared, so that juvenile tabes cannot any longer be considered as a curiosity. The author describes the following cases, of which a clinical summary is here given: Case I. Girl twenty years old, hereditary lues; mother died of progressive paralysis; father has Argyll-Robertson pupil; beginning of the disease in the sixteenth year. Optic nerve atrophy, Argyll-Robertson pupil, Westphal symptom, disturbance of sensibility on thorax, hypotonia, slight disturbance of muscular sense, lancinating pains, girdle sensation. Case II. Man, twenty-three years old; syphilis of the parents. Since the ninth year rheumatic pains; from the twentieth year disturbance in gait, Argyll-Robertson pupil, radial paralysis, disturbance of sensation on the thorax and the right plantar surface, slight Romberg. Case III. Girl, twenty-one years old; father probably has progressive paralysis. Since the thirteenth year anisokoria. Since the fifteenth year ophthalmic migraine; Argyll-Robertson pupil, sensory disturbances on trunk, Westphal symptom. The importance of syphilis in the etiology of tabes and progressive paralysis is becoming more and more recognized in spite of the objections of Virchow, Leyden, and others. It no longer satisfies the investigator to ascertain in what per cent. of cases of tabes syphilis is found, but he wishes to show that syphilis is a *conditio sine qua non*. This opinion is supported by Moebius and in this respect he goes further than Erb, who was the first in Germany to announce that syphilis was of etiological importance. In regard to the neuropathic disposition, the author believes that it is frequently impossible of proof. If this disposition is present, tabes dorsalis cannot develop unless a previous infection by syphilis has existed or unless hereditary syphilis is present.

SCHWAB.

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1. The Pathological Changes Produced by Lumbar Puncture. OSIPOW.
2. Disturbance of Temperature Sense in Syringomyelia. ROSENFELD.
3. The Origin of the Cervical Sympathetic in the Spinal Cord. LAPINSKY and CASSIRER.
4. Concerning Ataxia. LENAZ.
5. Friedreich's Disease. BIRO.
6. Disturbances of Achilles Tendon, Reflex in Tabes Dorsalis and Sciatica. BIRO.
7. Physiology and Pathology of Tendon Phenomena in the Upper Extremities. MOHR.
8. Spinal Cord Changes in Compression by a Tumor at the Level of the Uppermost Segments. CRIESE.
9. Acute Mercurial Polyneuritis. SPITZER.
10. Diagnosis of Acute Focal Lesions in the Oblongata and Pons. WALLENBERG.
11. Spinal Muscular Atrophy due to Lead-poisoning, Occurring in a Case of Infantile Poliomyelitis. VON SARBÓ.
12. Extensive Disease of the Vessels and Meninges of the Brain and Cord in the Early Stage of Syphilis. FINKELBURG.
13. Paralysis Agitans Combined with Myxedema. Thoughts on Pathogenesis of Paralysis Agitans. LUNDBORG.

1. *The Pathological Changes Produced by Lumbar Puncture.* Lumbar puncture has, in several instances, proved fatal. Nevertheless, there seems to be prevalent a general feeling that it is a perfectly harmless procedure which may be employed even when the indications are not clear. Ossipow has made some experiments upon animals to determine the possible harmless effects upon the nervous system. The plan of the experiments was as follows: (1) A single puncture; (2) a series of punctures with short pauses between them (1 and two days); (3) a series of punctures with intervals of a week; (4) lumbar puncture with aspiration of the cerebrospinal fluid; (5) a control experiment. The animals (dogs were employed) were killed by division of the carotid artery under ether, and the brain and cord were immediately removed, fixed and prepared for study. It was proved that evacuation of the cerebrospinal fluid by means of puncture produced a prolonged hyperemia of the vessels of the meninges and of the brain and cord. After repeated punctures, numerous punctiform hemorrhages, especially in the grey matter of the lumbar, upper dorsal, and lower cervical segments of the spinal cord, and more rarely in the brain, are found. After aspiration, hemorrhages into the central canal are very frequent. After repeated punctures, the nerve cells show distinct changes. Although the experiments upon animals may not be directly applicable to man, they nevertheless suggest to the author several therapeutic considerations. In the first place, when large quantities of fluid are to be removed, the possibility of cerebral hemorrhage should be kept in mind. The use of the procedure should be confined to cases in which there are distinct signs of pressure which threaten the life of the patient. In sclerosis of the arteries and in aneurysm of the cerebral vessels lumbar puncture is contraindicated. It is absolutely contraindicated, also, in acute and chronic disease of the central nervous system in which there are no distinct symptoms of increased pressure on the part of the cerebrospinal fluid. The danger of the diagnostic use of lumbar puncture is much less if only small quantities of the fluid are removed. Lumbar puncture in apoplectic hemorrhage, for the purpose of determining whether the blood has entered the ventricles, is of doubtful value, as a bloody discoloration of the fluid may depend upon other causes; for instance, the injury of a vessel by the needle. Moreover, the removal of the fluid may bring about increase of the hemorrhage. Lumbar puncture with aspiration of the fluid should be entirely abandoned.

2. *Disturbance of Temperature Sense in Syringomyelia.* Rosenfeld's patient had syringomyelia of the cervical type. A peculiar feature in the case was that while the man could not distinguish between the extremely cold and hot test tubes, he could tell when he was touched with a cold or a warm hand. This anomaly might be explained upon the ground that there was in the patient a peculiar modification of theremoanesthesia, by reason of which extreme temperatures were not distinguished, while temperatures approaching that of the body were properly discerned; or upon the theory that there was a local summation of temperature sense impressions. To determine whether the latter was the correct explanation, the author used coils of lead tubing, so as to cover a large surface, and passed water of different temperatures through them. When thus examined, the patient could distinguish temperature differences better than when test tubes were used. In the case of the hand, however, not alone is there a summation of impulses, but cognizance must also be taken of the fact that patients with syringomy-

elia have not lost the memory for heat and cold. The touch of the hand produced a complicated sensation: One of touch and pressure, one of more or less moisture, and one of temperature. If a patient is touched with a hand having a different temperature from his own skin surface, the sensations still preserved may suffice to awaken a recollection in the brain sufficient to identify the hand as warm or cold. The summation of impulses is an auxiliary factor.

3. *The Origin of the Cervical Sympathetic in the Spinal Cord.*—A number of experiments have been made to determine the origin of the sympathetic nerves, the most important being those of Huet and of Onuf and Collins. The former extirpated the superior cervical ganglion and studied the cervical spinal cord by the Marchi method. No special changes were found. Nissl's stain revealed degenerative changes in the anterior horn on the operated side. Onuf and Collins, after extirpating either the stellate or the semilunar ganglion from cats and studying the nervous system, concluded that the afferent fibers of the sympathetic spring, not from the spinal ganglia, but from the ganglia and plexuses of the sympathetic, and terminate in the cells of Clarke's column and in the intermediate zone. Lapinsky and Cassir removed the superior cervical ganglion from 5 animals, and the inferior from 2. The animals were killed after 2 or 3 weeks, and the cord was studied by the Marchi and the Nissl methods. The results were negative. Hence the authors conclude that the question of the origin of the sympathetic in the spinal cord is not as yet solved.

4. *Concerning Ataxia.* There are two theories of ataxia: one that the condition is due to a disturbance of the function of the central organs or of the centrifugal tracts; the other, that it depends upon disturbances of sensation. As against the latter theory, there are a number of cases on record of anesthesia without ataxia, and of ataxia without anesthesia. Sensation is necessary for the control of movements, but not for their inauguration. The author's general conclusions are that in the execution of voluntary movements 2 systems are concerned: first, the cerebrum (cortical system), with the pyramidal tracts, which convey the voluntary impulses to the muscles, and the sensory tracts, which inform us as to the position of our limbs; second, the cerebellar system, which influences the unconscious, but indispensable, synergic impulses. Diseases of the cerebral system produce, in general, paralysis; those of the cerebellar system, asthenia and ataxia.

5. *Friedreich's Ataxia.*—A report of 5 cases of Friedreich's ataxia, with a review of the literature, together with a lengthy but valuable table of differential diagnosis.

6. *Disturbances of the Achilles Tendon-reflex in Tabes Dorsalis and Sciatica.*—Biro, in a study of the Achilles tendon-reflex, finds that in tabes dorsalis it may, in the beginning, be absent on one side, and, later, disappear on both sides. Its absence in healthy persons is very doubtful. Biro does not think it probable that in health a tendon-reflex is ever absent from birth, in any one extremity. In many cases of disease of the sciatic nerve the Achilles tendon-reflex is absent on the affected side. In no case was there such a disturbance in a healthy extremity. In several instances the reflex was diminished in the beginning, disappeared later, gradually returned during convalescence, and was entirely restored after complete cure. The reflex is dependent upon the sciatic nerve. The disturbance of the reflex

in so-called sciatica is strongly in favor of the view that this affection is not a neuralgia, but depends upon a distinct anatomic lesion.

7. *The Physiology and Pathology of the Tendon-reflexes of the Upper Extremities.*—Mohr's conclusions are as follows: (1) The tendon-reflexes in the upper extremities are inconstant; the triceps reflex is absent in 33 per cent. of healthy persons; the supinator reflex in 13 per cent. (2) The absence of these reflexes in diseases of the nervous system is not directly applicable in diagnosis. (3) In *tabes dorsalis* these reflexes are absent in about the same proportion as in health. (4) Only the presence of the reflexes in normal or increased intensity can be of diagnostic value. (5) In the presence of exaggerated reflexes, the diagnosis between organic disease and functional disturbance can be made by a study of the muscle *tenus*, which is increased in the former, and manifests itself, in its earlier stages, during quick passive supination and quick extension of the flexed forearm.

8. *Spinal Changes following Compression by a Tumor at the Level of the Uppermost Segment of the Cord.*—The tumor was of the size of a walnut, and had grown between the dura and the bone, occluding the foramen magnum on the right side, and leaving only a small space for the oblongata on the left. The lowest part of the oblongata and the cervical segments down to the lower border of the third were compressed. The cord was reduced to a thickness of from 3 to 4 mm. at the point of the greatest compression. A curious feature was that the interior portions of the cord suffered more than the periphery; this seems to be the rule in compression of the cord, although there is no satisfactory explanation for it. The interior columns were generally preserved. All gradations between slight degeneration of the nerve-fibers and complete disappearance of all nerve elements could be traced. Actual softening was not present, and the consistency of the affected parts did not differ materially from that of other portions of the cord; microscopically, the signs of edema and swelling were less marked than those of secondary sclerosis. The presence of round cells in large numbers and of newly-formed blood vessels indicated the co-existence of inflammatory processes. Secondary degeneration was present in the posterior columns, but the comma tract could not be traced for more than 3 segments (the Marchi method was employed). It is still undecided whether all the fibers of this tract are of the same nature and have the same origin. Schultze assumes that they are composed of descending fibers of the posterior roots, while Tooth ascribes to them an endogenous origin. Ziehen believes that both views may be correct. In the present author's case, the degeneration was observed on but one side, although the posterior horns of both sides were involved. If it is assumed that the fibers come from the posterior roots, the unilateral degeneration can be more easily explained, as the left posterior portion of the cord was more degenerated than the right. The oval field of Flechsig was not degenerated.

9. *Acute Mercurial Polyneuritis.*—A syphilitic patient of 28, suffering from a recent maculopapular syphiloderm, after receiving twenty-two inunctions of gray ointment, developed pain, tenderness and ataxia of the lower limbs. The pupils, bladder and rectum were normal. The tendon-reflexes were exaggerated. Romberg's symptom was present; mentality was good. Spitzer considers the case one of neuritis of the motor nerves, and bases the view that it was due to the mercury and not to the syphilis

upon the fact that when mercurial treatment was suspended the neuritis promptly disappeared, although the syphilitic manifestations of the skin continued and increased. During the period of the neuritis, the urine contained mercury. Interesting, of course, is the exaggeration of the patellar reflex and the ankle clonus. The author does not think that this feature is necessarily indicative of spinal involvement, and believes that it can be present with a peripheral neuritis.

10. *A Clinical Contribution to the Diagnosis of Acute Focal Lesions in the Oblongata and the Pons.*—The cases here reported illustrate a diagnostic acumen on the part of the author that is truly astounding. There were no autopsies in any of the cases, but the reasoning is so logical that the diagnosis may be accepted. Case I is that of a woman of 55, with marked arteriosclerosis. After an apoplectic attack without loss of consciousness, there appeared difficulty in swallowing, vertigo, and sensory disturbances in the right half of the face and in the left leg. The subjective symptoms were (a) vertigo, with a tendency to fall, first to the right, and later to the left side; (b) a sensation of cold on the right temple; (c) disturbance of deglutition, which later disappeared. The objective symptoms were: (a) disturbance of sensation in the distribution of the two upper roots of the right trigeminus; (b) sensory disturbances, chiefly of cold and pain, on the left side of the body, from the scapula and mamma downward, varying in intensity, and occasionally extending to the upper extremity; (c) vasomotor disturbances on the right half of the nose; (d) diminution of the right corneal reflex; (e) constant paralysis of the right vocal cord; (f) ataxia of the right extremities; (g) diminution of the right knee-jerk, varying in intensity; finally exaggeration. The diagnosis of the author was thrombosis of the right posterior inferior cerebellar artery. Case II was a man of 61, who, after very severe exertion, experienced weakness and tingling in the left foot followed by vertigo, paralysis of deglutition, cough, dysarthria, disturbance of sensation on the right side of the face and left side of the body (exclusive of the face), a tendency to fall to the right and paresis of the left leg. The diagnosis was thrombosis of the right vertebral artery, beginning at the point of origin of the right posterior inferior cerebellar artery. Case III, a man of 48, with a history of syphilis and old otitis media, was seized, without disturbance of consciousness, with vertigo and vomiting. The persisting symptoms were vertigo and vomiting, a tendency to fall to the left, ataxia of the left limbs, absence of the patellar, cremasteric and abdominal reflexes, paresis of conjugate deviation to the left—particularly of the left abducens—marked horizontal nystagmus when looking to the left, and rotary nystagmus when looking to the right; deafness in the left ear, with shortening of bone conduction, and a negative Weber test. The lesion was placed in the left restiform body, at the entrance of the auditory nerve. Case IV, a man of 70, with marked arteriosclerosis, after an apoplectic attack with paresthesia of the nose, tinnitus in the right ear, and unconsciousness; had the following symptoms: Vertigo, a right-sided corneal scar in consequence of keratitis, sensory disturbance of both trifacial nerves, paresis of the muscles of mastication on the right side, total paralysis of the right abducens and of the right facial, partial labyrinthine deafness on the right side, hyperesthesia for pain and less for temperature sense on the left side of the chest, neck and shoulder; and slight exaggeration of the tendon reflexes of the left leg and of the left musculospiral reflex. The diagnosis was hemorrhage from the central branch of the artery going to the right facial

nucleus in the right half of the pons, between the sensory fifth nucleus, the trapezium, and the root of the abducens. Under each case the author gives able arguments justifying the diagnosis.

11. *Spinal Muscular Atrophy following Lead Poisoning in a Case of Infantile Poliomyelitis.*—The muscular atrophy began in the patient, who was first a lead moulder and then a compositor, at the age of 20, and affected all parts except the muscles of the face, neck, and lower left leg. The atrophy commenced in the right leg, which from childhood on was shorter than the left, the result of poliomyelitis. From the age of 25, the patient also suffered from dermatitis herpetiformis.

12. *A Case of Extensive Disease of the Vessels and Meninges of the Brain and Cord in the Early Stages of Syphilis.*—The patient was a man of 43, who had a tuberculous history. Six months after infection he sustained, without loss of consciousness, a left-sided hemiplegia, which disappeared in 3 weeks. Two months later there was a severe headache, which yielded to specific treatment. Six months after the first appearance of cerebral phenomena, death occurred in an attack of right-sided hemiplegia, with symptoms of vagus paralysis. The autopsy showed a fibrinous pleurisy and lobular pneumonia; and in the brain extensive changes in the arteries and veins, in the form of periarteritic and endoarteritic, meningitic processes at the base of the brain in the neighborhood of the right frontal convolution and in the cord. Perineuritic and endoneuritic changes of the basal nerves and of the spinal roots, and softening in the lenticular nucleus and in the pons.

13. *A Case of Paralysis Agitans combined with Symptoms of Myxedema.*—Lundborg believes that myoclonus familiaris and paralysis agitans are both due to disease of the thyroid gland, and calls attention to the analogy which others have also observed, between paralysis agitans and exophthalmic goiter. He reports the case of a woman of 54, who in addition to paralysis agitans, had a number of the symptoms of myxedema. At the autopsy the thyroid gland was found small, with no middle lobe. Microscopic examination of the right lobe showed chronic interstitial changes, as well as a degeneration of the alveoli. The left lobe was the seat of cystic change. The author assumes that a thyroid so altered furnishes a pathologic secretion which is capable of producing a profound alteration in the nervous system.

RIESMAN.

MISCELLANY.

THE TREATMENT OF MORPHINOMANIA. O. Jennings (Lancet, Aug. 10, 1901).

Dr. Jennings insists that the mere suppression of the habit of taking morphine such as can be assured when a patient is under restraint is no proper cure, and that unless the craving for the drug is removed the habit will of a certainty return when the patient regains his liberty and when the conditions which have led to the taking of the morphia again arise. In regard to this craving, one must differentiate, when it will be found that it occurs in two forms. Hypodermic injections of morphine seem to give energy and "go," and it is for this reason that the syringe is resorted to on the slightest pretext. It is, says Dr. Jennings, the exact equivalent of brandy nipping. Thus one form of craving is a desire for the purely stimu-