There was some ataxia of the upper extremities. The stereognostic sense was preserved in the right hand, but the patient was unable to name all the objects placed in this hand. The general sensibility was markedly diminished on the right side. The sphincters were both involved. The patient's mentality suggested paresis strongly. His facies was drawn. His answers were slow; the speech was typically paretic, slow, with stoppage on letters c and m. He looked exhausted, but at the same time would say, "I feel fine." The memory was very poor. He was unable to recollect events of two or three days past.

Soon he began to complain of headache. Vomiting spells made their appearance. The epileptic attacks became very frequent. Finally coma developed and the man expired.

In view of the distinct clinical picture of paresis, a Wassermann test was made of the blood serum and the cerebrospinal fluid. Both proved to be negative. Lumbar punctures showed a great increase of pressure. Lymphocytosis was present.

Autopsy showed besides a cirrhosis of the liver a large tumor within the basal ganglia of the left hemisphere, destroying the largest part of the caudate and lenticular nuclei, also the adjacent part of the optic thalamus. The tumor extended downward to the base, where it appeared on the side of the pons covered by cortical substance. Histologically the tumor was a mixed-cell sarcoma. Below the tumor the tracts were degenerated.

Three months before he died he began to develop the signs of intracranial pressure. For three years and six months he did not show a single indication of intracranial pressure. The hemiplegia on the right side was mild, the sensory paralysis was very pronounced and Dr. Gordon thought at one time of the thalamic syndrome. This case was striking in resembling paralytic dementia. Three other neurologists who saw the patient besides were unanimous in this diagnosis.

RECURRENT BALDNESS OF NERVOUS ORIGIN

By Edward B. Krumbhaar, M.D.

I. S., a young man of 22, of Russian Jewish parentage, and neurotic disposition, is now recovering from his third attack of complete baldness. When first seen in August, 1912, his pate and eyebrows were absolutely free from hair (not even lanugo being present). It has been gradually returning for the past year, though it is still patchy, and not as thick as previously.

The first attack, which came on in 1906 and lasted two years, was directly attributed by him to being frightened by another boy. Before his second attack in 1909 and his present attack, no actual fright was given him, but at both periods he complained of frequent terrifying nightmares. He also complained of frontal headaches, flushing of the face and general sweating,—it was for this reason that he came to the medical dispensary—and these symptoms were aggravated by the nightmares. When seen at the Skin Dispensary by Dr. Davis, no parasites were found on the scalp, the roots of the hair were found intact, so that a good prognosis was given, and the diagnosis of alopecia areata made.

Medical examination proved negative except for a slight cardiac irregularity (of sinus-node type). No cause was ascertained for the frontal

headaches, urine and Wassermann reactions being negative, examination of eyes and digestive tract also being negative. Hemoglobin 85 per cent., red blood cells 4,500,000, blood pressure: 115 systolic; 80 diastolic.

This case apparently belongs to the so-called neurotrophic type of alopecia areata and is similar to the case described by Dr. Stelwagon in his text-book, where the onset of baldness followed immediately after a railway accident. Somewhat similar cases, with favorable termination, have been reported by Stowers (*Brit. Med. Jour.*, 1897, p. 44); Boisser (*Progres Méd.*, June 17, 1899, p. 380); Bidon (*La France Méd.*, 1899, p. 269), and M. Morris (*Text Book on Diseases of the Skin*, 1894, p. 473); but in none has there been a recurrence, as in this young man's case. A further support to the theory that the baldness is of nervous origin is the experimental proof furnished by Max Joseph, who succeeded in producing a similar baldness in cats by removal of the second cervical sympathetic ganglion.

Dr. F. X. Dercum asked whether there were a psychic shock purely or a physical trauma. He asked the question because we have so many hundreds of cases of shock as the result of accidents, railway and other, in which baldness does not follow.

Dr. E. B. Krumbhaar said that before the first attack he was threatened by another boy and before the other attacks the nearest approach to shock was rather severe nightmares.

Dr. Stelwagon in his text-book gives a case in which this condition followed a railway accident.

Dr. J. W. McConnell was reminded of a woman who had been his patient for twelve or thirteen years. In that time she has had two attacks of alopecia areata in which she was seen by Dr. Hartzell. In her case there seemed some connection between her blood condition and the loss of hair. In the first attack her hemoglobin dropped to 52 and in the second to less than 50. The woman recovered her hair very beautifully under the administration of rest and blood tonics. There was no nervous or parasitic cause in her case. The woman lost the hair under her arms and some of the pubic hair as well.

Dr. Krumbhaar said his patient had a count of 4,500,000. His loss of hair was limited to the scalp and eyebrows and not to the genitalia. The treatment was local.

Dr. Charles W. Burr presented a case of multiple sclerosis.

Dr. Alfred Gordon said three diagnoses suggest themselves to his mind: first, possibly generalized myotonia, not in the sense of the myotonia described, but simply in the sense of a hypertonicity of all the muscles; all the muscles, including those of the face, were kept rigid. Another diagnosis is paralysis agitans, as stiffness is noticed in paralysis agitans. The man's manner of holding himself while walking suggests this. Besides, while sitting his hands shake. The third possibility is, in view of the exaggerated knee-jerks and toe phenomena Dr. Burr described, whether the man is undergoing the same changes in his upper extremities as in the lower extremities and thus giving the impression of spastic upper and lower paraplegia.

Dr. T. H. Weisenburg read a paper entitled, "Loss of Emotional Expression of the Left Face similar to a patient reported by Dr. Mills in whom there was Thrombosis of the Superior Cerebellar Artery."

Dr. Charles K. Mills said: Although the loss of emotional expression

on one side of the face shows now but very little, there was no doubt at all of this loss when he saw the patient first. It was not only visible to him, but to two other persons in his office and then as he understands, although he was not present, Dr. Lloyd also saw it and remarked on its existence. Little ataxia was left when Dr. Mills saw the patient. The case, of course, interested him because of its partial similarity to one which he reported as a symptom complex of the superior cerebellar artery. It seems to him in this case the lesion was less extensive than in the one he reported. A lesion was probably of the same arterial distribution or same position, but less extensive and more amenable to antisyphilitic treatment than in his case. The ataxia, it will be observed, is relatively on the same side of the body as in Dr. Mills' case.

For several years Dr. Mills has been interested in the question of emotional expression and has presented some communications on the subject.

In connection with this subject of emotional expression, he wished in passing to put on record two recent observations. These were regarding two cases, both women, in which the patients showed the unusual symptom of *inability to laugh aloud*. In one case other symptoms present indicated that the upper spinal cord and tracts entering the cerebellum by way of the restiform body were involved. The other case also had cerebellar symptoms. In both, vertical nystagmus, among other symptoms, was present. One of these cases was shown at the recent meeting of the ophthalmological section at the College of Physicians.

Dr. Charles M. Byrnes read a paper entitled, "Clinical and Experimental Studies upon Injection of the Gasserian Ganglion with Alcohol for the Relief of Trigeminal Neuralgia."

Dr. J. Hendrie Lloyd asked about the risks of paralysis of the motor branch of the fifth nerve in these injections. He had in the last two weeks had referred to him a case of complete paralysis of the motor branch of the fifth nerve following an injection of alcohol for neuralgia of the superior maxillary division. The injection was given by a surgeon of this city. Dr. Lloyd was not present at the time of the injection. The pain ceased promptly, but the surgeon soon afterwards found that something else was the matter with the man, and sent him to Dr. Lloyd for examination. He found a complete paralysis of the motor branch of the fifth nerve. There was entire loss of power in the temporal and masseter muscles and in the pterygoids. The patient could not close his jaws, nor speak clearly, and he had drooling. Dr. Lloyd thought his condition a very serious one. He would like to know the prognosis in such a case. He was not able to say just what the operation was. The patient when sent to him had a little antiseptic dressing on the side of his face, but it was said that there had been an injection of alcohol into the superior maxillary division of the fifth nerve. He had had bilateral trigeminal neuralgia, and had been operated on three months before on the right side, and then the pain recurred on the left side. The motor paralysis, however, was unilateral, and was on the left side, where the alcoholic injection had been given. Dr. Lloyd thought it was a very interesting complication and a very important one.

Dr. William G. Spiller said he had been very much interested in Dr. Byrnes' work and had urged him to carry it on as he felt that Dr. Byrnes, from his thorough knowledge of the anatomy of the parts, was well fitted for giving this treatment. Dr. Spiller thought the time had not been sufficient to determine whether the pain will return or not in Dr. Byrnes' cases.

One would hardly expect the pain to return in exactly the same way as after injection of the peripheral branches. There must be a very considerable destruction of the cells of the Gasserian ganglion after an alcohol injection, though probably all the cells would not be destroyed or there could not be a return of sensation, and Dr. Byrnes had spoken of a return of sensation in a comparatively short time. The degenerated cells must have degenerated axis cylinders in the sensory root, and it is not probable that the regeneration of the axis cylinders in this root from partially affected nerve cells would be complete and extend to the portion within the pons. It is not probable that fibers will regenerate where they have no neurolemma sheaths. We have no evidence of return of function from regeneration of fibers within the central nervous system. Dr. Byrnes stated that he injected the ganglion in two cases in such a way as to preserve the integrity of the first branch. In some work Dr. Spiller carried on some years ago with Dr. Frazier he came to the conclusion that the different branches of the fifth nerve are separately represented in the Gasserian ganglion and in a considerable degree throughout the spinal root.

Dr. T. H. Weisenburg said he had been injecting patients in the peripheral branches for a number of years and sometimes results have been very encouraging. Other times he had sworn he would not do it again. Dr. Byrnes' method is certainly a better one than the peripheral method. It should be cleaner. He asked Dr. Byrnes how far to push the needle after it goes into the foramen ovale so as to get it into the Gasserian ganglion. It is rather important to know. The whole question is whether or not you can have regeneration in the sensory root. Some years ago Dr. Weisenburg had a patient with tic douloureux in whom the Gasserian ganglion was cut by Dr. Frazier and in whom Dr. Weisenburg found some regeneration in the sensory root. He was not at all satisfied that it could really be so. Within the past six weeks he had had an interesting experience. Seventeen years ago Dr. Keen removed the Gasserian ganglion for tic douloureux, the ganglion being sectioned. Seventeen years later the patient had the same kind of a pain in the same area. Dr. Weisenburg did not know how to explain it.

Dr. D. J. McCarthy said those of us who remember the early technique of operations on the Gasserian ganglion can readily recall that the technique was to expose the ganglion with more or less hemorrhage, and then a section of the peripheral branches was made and a section as far back as possible of the roots, then a hemostat was introduced and the nerve completely rolled up and withdrawn. One can understand how easily some of the ganglion might be left. He remembered Dr. Spiller's examination in some of those cases in which the ganglion was spread out and showed many broken parts.

Dr. F. X. Dercum said that at the Jefferson Hospital they had last spring a woman who had a number of years ago been operated upon by Dr. Keen for trigeminal neuralgia, it being one of the cases in which the sensory root of the Gasserian ganglion had been evulsed. For some time before readmission she had deteriorated very greatly in her general health. She had marked arterio-sclerosis, had lost greatly in weight, was mentally depressed, cried a great deal, complained incessantly of pain and apparently of the same character as she had had formerly. She was put to bed and kept in bed persistently for a number of weeks. The case was at first very puzzling, but subsequently the pain disappeared. She asserted she was well and left the hospital. Whether her recurrence of pain had been brought about by her depression Dr. Dercum did not know, but he regarded the pain as psychic. As her health improved, the pain disappeared.

Dr. D. J. McCarthy called attention to a word of caution as to operations in early cases of tic douloureux. He referred to one of Dr. Keen's cases in which a surgeon of Buffalo, or someone else, had removed the Gasserian ganglion. There was recurrence and Dr. Keen removed the ganglion again. Dr. McCarthy said his opinion, based on his experience at Blockley, St. Agnes and private practice, is that unless the patient has evidence of fairly well defined arterio-sclerosis operations, more particularly radical operations, are not justified. He would not like to make this as an absolutely dogmatic statement, but it is in conformity with his personal experience. The average case that one sees at Blockley with good soft arteries, a low blood pressure, a tic douloureux does not call for operation. He was aware of the cases of drawing teeth as a means of relieving peripheral irritation and the usual foolishness of such procedures. Where the teeth are really at fault a thorough study of these cases usually results in fairly definite information in some direction or other which carried out gives good results. One case particularly of a man who had tic douloureux where the filling was removed from the tooth and the pain entirely disappeared. This man had a history of syphilis and a positive Wassermann. About a year later he returned with a recurrence of pain and thorough study of the case was made, more especially in regard to the teeth. He became discouraged and went to a hospital and had one or two section operations on the nerves. In the meantime an X-ray examination showed a wire broche broken off in one of the tooth canals and protruding through the root to the bone. Here at least was reason in a man of that type for a condition of reflex pain in the distribution of the fifth nerve. As to this matter of the Gasserian ganglion: In old age with arterio-sclerosis and hypertension the internal carotid swells out in the entrance of the skull into an aneurysm of the fusiform type. It is well in injections to keep this in mind. This aneurysmal dilatation of the internal carotid is a possible etiological factor for the development of tic douloureux. On account of the arterio-sclerosis and the alteration of the position of the one or two supplying arteries given off to the Gasserian ganglion from this portion of the carotid an anemic condition results with secondary atrophic degeneration of the cells of the ganglion. When dilated the carotid pulsates directly against the Gasserian ganglion and in this way may also keep up a constant irritation of the ganglion or its peripheral or central connections.

Recently in a case reported by Dr. Müller, a case of tic douloureux, where peripheral operation was done where it was thought there was some disease of the ganglion, the pain had returned and the patient went to a Christian scientist and the pain immediately disappeared.

Dr. Alfred Gordon said he had a personal experience of three cases in elderly individuals in which the Gasserian ganglion was totally removed and the pain returned with the same severity as before operation. In one particular case, the last one which he saw a year ago, the woman was operated on by Dr. Deaver; a peripheral operation was done which relieved the patient for a short time. Finally the radical operation was done. The patient had some relief for four or five weeks. Then the pain returned with the same severity. About that time she began to develop mental phenomena and Dr. Gordon heard recently that she died with mental phenomena and exceedingly severe pain. In aged individuals there is a possibility that the condition of the blood vessels has something to do with the return of pain. Dr. Gordon was as much at sea as Dr. Weisenburg as to an exact explanation of return of pain after removal of the Gasserian ganglion.

Dr. Charles K. Mills said as to the question why the pain returns after the supposed complete removal of the Gasserian ganglion he believed it is because, in some of the cases at least, the ganglion has not been completely removed. He made some investigations when he was writing a paper on the sensory functions attributed to the seventh nerve, of cases which had been operated upon by different surgeons and he became convinced that the ganglion had sometimes not been removed. In some instances also of supposed resection of the sensory root of the fifth nerve the root had not been cut, although the cases had been reported as instances of complete operation of these sorts. In most of them there was at least temporary and in some cases rather long continued relief from pain. Dr. Mills had some investigations made in connection with members of the surgical staff in the University Hospital in regard to the difficulties attending the cutting of the sensory root. Facts of this kind must be borne in mind.

Dr. F. X. Dercum said he had of late years had very few of his cases of tic douloureux injected and very few operated upon; certainly a much smaller number than in former years. He had at present three cases of typical tic douloureux under his care at the Jefferson Hospital. All three are upon massive doses of strychnia. Two have already improved after a few days of treatment.

Dr. T. H. Weisenburg said he had the brain from a case in which a distinguished surgeon from Baltimore was supposed to have removed the ganglion. The ganglion was not removed, although the surgeon said he had removed it, and he had done a great many of these operations. Dr. Weisenburg has three brains in which the ganglions were said to have been removed by different men, and in every one there had been large slices of the temporal lobe removed.

Dr. William G. Spiller asked whether Dr. Dercum had had any success with massive doses of strychnia in the treatment of occipital neuralgia. Strychnia was originally recommended by Dana for tic douloureux and has been used successfully by many over a long period.

Dr. F. X. Dercum said that strychnia is one of the most important therapeutic agents we have in tic douloureux. The trigeminal nerve is a remarkable nerve in very many respects and differs from all others in two particulars; first in its remarkable power of regenerating after section or resection of its branches, and secondly in the efficacy of strychnia in the control of pain when seated in its distribution. Strychnia, strangely enough, does not influence pain in any other situation, but does control the pain of trigeminal neuralgia beyond question, and this is one of the remarkable facts of therapeutics. Other nerves in various portions of the body present peculiarities, such, for instance, as the tendency of the sciatic nerve to be involved in rheumatism, or of the supraorbital branch of the trigeminal to be affected in malaria. Clinical facts like these are difficult to explain but they must nevertheless be admitted as facts. The remarkable action of strychnia in trigeminal neuralgia must be emphasized and it should always be tried before operative interference, even injections are resorted to. When possible the patient should be placed in bed and the strychnia given hypodermically, first in moderate doses and later increasing them until as much as a twentieth is taken every three or even every two and a half hours. As a rule the pain subsides long before such massive doses are given. If strychnia fails then surgical interference should be considered but not before.

Dr. Charles M. Byrnes asked in regard to Dr. Lloyd's question in ref-

erence to paralysis of the motor root, where the dressing was on the patient's face.

Dr. J. Hendrie Lloyd could not give the exact point. The injection was made to strike the superior maxillary nerve, a branch of the fifth, and resulted in the cessation of the pain and paralysis of the motor branch.

Dr. Byrnes did not see how the motor root could have been affected from an injection of the second branch.

Dr. Lloyd asked what is the prognosis of recovery.

Dr. Byrnes replied that it was good. It may take six or eight months.

In regard to the possibility of regeneration there is no doubt in his mind that many of the cells have been so changed that regeneration will not occur. Dr. Weisenburg's question concerning the depth to which the needle is introduced should have been mentioned. The foramen ovale is usually reached by Hartel's method at a depth of 6 cm., then the needle can easily be introduced 1.5 cm. without further danger. The anterior surface of the petrous portion of the temporal bone forms a much more obtuse angle in the dog than in the human, and in the former a depth of 1 cm. may be used with safety. Dr. McCarthy's question concerning arterio-sclerosis is very interesting. Dr. Byrnes did not quite agree with him that only those cases with arterio-sclerosis should be subjected to surgical procedures. Because a patient has no peripheral arterio-sclerosis, it does not follow that he has no sclerosis in his cerebral centers. Dr. Byrnes could confirm this from the examination of a ganglion removed from a person who had pronounced peripheral sclerosis, while the ganglion showed little or no change in the vessels. Dr. Spiller's work has shown that increase of arterio-sclerosis thickness is quite common, and Dr. Byrnes' studies have confirmed these earlier observations. Dr. Dana has also shown similar changes. Dr. Byrnes has also noticed in many cases of tic douloureux that not infrequently the facial artery on the affected side feels a little more firm than that on the opposite side. Dr. Dercum's suggestion of the return of the pain being probably due to psychic origin is quite acceptable. Dr. Byrnes believed that the great majority of recurrences are due to incomplete removal of the ganglion. As Dr. Spiller suggested, Dr. Byrnes had never found a perfectly complete ganglion after surgical procedures. On the other hand, he saw one very interesting case of this kind. The patient had had two, possibly three, attempts at gasserectomy. Having had the first operation in some western city, without relief, he came to Dr. Cushing who felt that the ganglion had not been perfectly removed. Dr. Cushing operated and some time later the pain returned, associated with facial paralysis upon the same side. In order to relieve the facial paralysis spinal accessory anastomosis was done. Some time elapsed when he again returned, complaining of pain in the old trigeminal distribution. It was not a typical tic douloureux attack, but a different kind of pain. The question was what was the possible pathway. About that time Hunt's clinical experience and anatomical studies on herpes made their appearance, in which he attempted to reconstruct the anatomy of the facial nerve; which suggested the geniculate ganglion as a possible source, and Dr. Cushing suggested that the pars intermedia be sectioned. Anatomically Dr. Byrnes could not see Hunt's foundation for his views and accordingly did not advocate such a procedure. He was told, however, that the operation was performed without marked success. Then the only other possibility which occurred to Dr. Byrnes was the inclusion of certain sensory elements in the spinal accessory root, which he thought perhaps might account for the return of pain, and suggested that

the face be reparable with the hope of lessening the pain. He did not come prepared to go into the various medical treatments of tic douloureux. In regard to the use of strychnia, he had seen a number of patients who had been temporarily benefited by its use. In fact the first case he saw had taken strychnia for some time and while in his office was affected with moderate tetanic contractions. Personally, he had had no experience in either trigeminal or occipital neuralgia.

NEW YORK NEUROLOGICAL SOCIETY AND SECTION ON
NEUROLOGY AND PSYCHIATRY OF THE NEW YORK
ACADEMY OF MEDICINE

JOINT MEETING, HELD ON NOVEMBER 11, 1913

DR. SMITH ELY JELLIFFE AND DR. I. STRAUSS in the Chair

THE IRREGULAR BONY FORMATIONS OF THE SELLA
TURCICA IN SOME EPILEPTICS

By L. Pierce Clark, M.D., and E. W. Caldwell, M.D.

A joint paper on this subject was presented with lantern slide demonstrations. The authors stated that cranial asymmetries and osseous deformities in epileptics had long since been the object of intensive study by many able investigators. A thickening of the skull, general or in special parts, had been carefully studied by American writers, including Peterson, Sachs, Fisher, Prout and Clark. In some instances the skull thickenings were very limited in area, forming the exostoses described as osteosclerosis by Binzwanger. Some young epileptics presented a markedly thickened skull, but usually the thickness was increased after the twenty-fifth year and became very marked after the fortieth year. The calvarium of the epileptic was heavier than that of the normal individual of the same age. These facts, and others bearing upon cranial thickenings and asymmetries, formed a striking part of the literature of epilepsy. Müller, in an examination of the heads of forty-three epileptics, found but four that he considered normal, and it was at once apparent that when we attempted to estimate the importance of the special cranial deformities and variations in epileptics, one entered upon a particularly difficult task. This was especially true when one selected so small a part of the base of the skull as the osseous formation of the sella turcica, a part of the skull which, until very recently, had attracted but little attention. Comparative studies of this region in health and disease were still to be made, and we were soon to face the problem more definitely, and solve its bearings upon epileptic states. The issue would not be so much upon the significance of the relationship which sella deformities might have upon the cerebral content itself, as the bearing the variations had upon the possible alteration of function of the posterior lobes of the pituitary bodies, and the rôle this defect or alteration of function might have upon convulsive disorders of epileptics in particular.

Dr. Clark said the very considerable variations of the bony formation of the sella turcica in epileptics was first called to his attention by Dr. Caldwell, who had made a number of X-ray examinations in the routine study of the speaker's cases. He believed that Dr. Caldwell's notice was