not selfish and is willing to divide with the other children. He is cleanly in his habits and not destructive with his toys. The imitative trait mentioned previously is very noticeable; his parents spoke of it independently of any questioning. He imitates many of the actions of his parents and playmates with surprising accuracy, and is even now learning much of his speech by imitating his sister, who is but 2 years of age. He has a decided taste for music and takes much delight in playing with the piano. His speech is very imperfect; he speaks only a few words connectedly; he finds difficulty in making sentences longer than three or four words. His wants are made known chiefly by nouns; verbs he uses with difficulty.

Physical Examination.—Child, 37 inches tall; weight, 33½ pounds. Complexion fair, hair straight and of fine texture, fontanelles closed. Circumference of the head 19 inches, meatus to meatus 14 inches. Nose broad at base. Distance between eyes 1¼ inches. Epicanthus present. Palpebral fissures oblique. Nystagmus present and marked. No fat pads in axillæ or supraclavicular regions. Mouth held open, tongue protruding, but not swollen. Lungs normal at the present time. Heart normal. Little fingers both shorter than normal and curve inward.

Thyroid treatment has never been tried, the case being so clearly one of Mongolism that I felt it would be folly to use it. 810 West Central avenue.

NOTE.—The following authorities may be consulted on the subject:
Taylor: Nervous Diseases in Childhood and Early Life.
Thompson: Clinical Examination and Treatment of Sick Children.
Goodhart and Still: Disease of Children.
Holt: Diseases of Childhood.
Koplik: Diseases of Infancy and Childhood.
Barr: Mental Defectives.
Ireland: Mental Diseases of Childhood.
Pfaundler and Schlossman: The Diseases of Children.
Allbutt: System of Medicine, viii, 236.
Waterson: Brit. Med. Jour., 1906, ii, 1701.
Neurath: Wien. med. Wochenschr., 1907, lvii, 1182.
Reavley: West. Canada Med. Jour., 1907, i, 450.
Baumann: Transvaal Med. Jour., 1906, ii, 107.
Sutherland: Practitioner, London, 1904, lxxiii, 821.
Sutherland: Lancet, London, 1900, i, 23.
West: Arch. Pediat., 1901, xviii, 918.

A CASE OF SUCCESSFUL REMOVAL OF A CEREBELLAR TUMOR *

THEODORE DILLER, M.D., AND OTTO C. GAUB, M.D.
Neurologist and Surgeon respectively to the Allegheny General Hospital
PITTSBURG

In a recent study Schuster, of Berlin, finds that about 15 per cent. of intracranial tumors are situated in the cerebellum.

In his work on brain surgery, published in 1893, Dr. M. Allen Starr collected 16 cases of cerebellar tumor in which operations had been done. In 11 of these cases the tumor was not found; of the other 5 patients, 3 died from the operation, and 2 cases the tumor was removed and the patient relieved. Writing again ten years later,¹ including his own personal experience up to that time, Dr. Starr collected 1,277 cases of brain tumor; of this number, he regarded 104 as operable. Among these 1,277 cases he found 58 cases of operations for cerebellar tumors. Dr. Starr gives table of operations for brain tumor (Table 1):

TABLE 1. STARR'S TABLE OF OPERATIONS FOR BRAIN TUMOR

	No. Cases.
	Cerebrum. Cerebellum.
Tumor found, removed, and patient recovered.....	154
Tumor found, removed and patient died.....	52
Tumor found, but could not be removed.....	22
Tumor could not be found.....	91
Total	319
	58

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Starr, M. Allen: Organic Nervous Diseases, 1903.

Writing only two years later, in 1905, Mills and Frazier were able to collect reports of 116 cases of cerebellar tumors in which operations had been performed; and they estimate that in 15 per cent. of these cases there was "removal with recovery."

Dr. Frazier, from a study of these 116 cases, has constructed the following table:

TABLE 2.—FRAZIER'S TABLE

	Per Cent.
Tumors found	45
Tumors not found.....	55
Removal with recovery.....	15
Removal with improvement.....	13.9
Removal without improvement.....	0.9
Improvement without removal.....	13.9
No improvement without removal.....	13.9
Death when tumor was removed.....	12.9
Death when tumor was not found and removed.....	28.7

Comparison of statistics of successive dates, showing an increase in the percentage of recoveries and improvements and a reduction in the mortality, is given in Table 3.

TABLE 3.—COMPARISON OF STATISTICS OF SUCCESSIVE DATES

Results.	Frazier's. Table—1904. Per Cent.	Duret's. Table—1903. Per Cent.	Oppenheim's. Table—1902. Per Cent.
Recovery	15	14	7.5
Improved	28	25	7.5
Unimproved	15	0	13.0
Mortality	42	60	71.0

A comparison of the statistics of the total number of cases in Frazier's collection with the statistics of the last five years shows a manifest improvement in the results as illustrated by Dr. Frazier in Table 4.

TABLE 4.—RESULTS IN FRAZIER'S TOTAL NUMBER OF CASES COMPARED WITH CASES IN PAST FIVE YEARS

Results.	Total Number of Cases. Per Cent.	Cases Reported 1899-1904. Per Cent.
Recovery	15	24
Improved	28	28.5
Unimproved	15	11.0
Mortality	42	35.8

Dr. Frazier remarks:

From a review of these tables one is struck at once with the progress that has been made in this field of surgery from every point of view. The percentage of tumors is yearly growing larger, the percentage of partial or complete recoveries is larger, and the mortality has fallen from 42 per cent. to 35.8 per cent. We believe that the results of surgical intervention on the cerebellar hemisphere will continue to improve, if not generally, at least in the hands of those who are giving this subject especial thought and attention.

We have gone over the table of 116 cases of cerebellar tumor collected by Dr. Frazier; and in doing so we are not able to note quite as high a percentage of cases in which the tumor was found and the patient recovered. From the study of this paper it appears to us that 10 per cent. of recoveries would be a fair allowance as against 15 which Dr. Frazier figures out. But these tables do indicate in a striking way that the mortality from the operations has been considerably reduced and the percentage of recoveries considerably increased in the last few years. In six cases in which Dr. Frazier operated the results were as follows:

One died after the first stage of operation; two recovered after removal of tumor; one relieved after evacuation of cyst, no recurrence more than a year after the operation; one considerably improved after palliative operation; one no improvement; tumor not found.

Dr. Harvey Cushing, of Baltimore, as is well known, has made a number of special detailed studies of the operations for intracranial growths; being anxious to learn of his experiences in cerebellar operations up to

date, we wrote to him, and he kindly responded with the following letter which sufficiently explains itself:

The following summary is complete so far as I can tell from a fairly careful survey of the hospital files and my own private records. I have never had occasion to look these things up before as an especial group and there may be a few omissions.

I have had thirty cases of known or presumed cerebellar tumor which have been subjected to the bilateral suboccipital operation which I favor through a "cross-bow" incision with permanent removal of the bone.

In this series there have been two deaths that can be directly attributed to the operation, both of them among the early cases, one patient with a vascular tumor of the vermiform process operated on in a comatose state, who died from hemorrhage into the fourth ventricle; the other a patient with a benign cerebellar pontine endothelioma, who died from pneumonia on the seventh day. This was before the adoption of the cerebellar table with the shoulder-supports. These are the only cases in which there has been any operative complications of any kind. The wounds in all other cases have healed per primam.

In eleven cases the tumor has been found and removed, or a simple (?) cyst evacuated.

Intracerebellar.—More or less solid tumors, three; cysts evacuated, four.

Extracerebellar.—Four.

Tumors found and considered irremovable, with no improvement after simple decompression, two.

Tumors not found, the operation resulting in a simple suboccipital decompression, twelve.

In two cases from the latter group I have operated some months later at a second session and found and evacuated an intracerebellar cyst on each occasion. One of the patients was operated on elsewhere and a solid tumor, which was not apparent at the time of the first operation, was found and removed.

It is my feeling that with a proper face-down position on a suitable operating table, with a skilled anesthetist and with a low operation with removal of the posterior half of the foramen magnum so as to get below the lips of the cerebellum and evacuate fluid before the dura is freely opened, these cases, contrary to the opinion that has been expressed by others, are favorable, if not more favorable, for operation as lesions of the cerebral hemisphere.

It is earnestly to be hoped that Dr. Cushing will, before long, publish his experience with cerebellar tumors in detail. For certainly the results he has attained should inspire us all with a more hopeful view of cases of this character.

In view of the experience of the immediate past these records of Frazier and Cushing are certainly most striking and noteworthy ones. And they abundantly indicate that there is a fair measure of chance for these poor patients suffering from cerebellar tumor when they are operated on by skilled surgeons who are specially trained for this work and who have their hearts in their work.

But not all investigators are able, like Frazier and Cushing, to see that the results of cerebellar operations are growing more favorable; and this other side of the case is well shown by Knapp of Boston.

Knapp² has made several studies of brain tumor from the standpoint of the operation. In a paper published recently (1906) he concludes from the study of 104 autopsies of brain tumor that only four were anatomically accessible and presented enough clinical symptoms so that they might have been localized for the purpose of an operation.

Knapp presents the following tables of operations undertaken for the removal of brain tumors of all sorts:

TABLE 5.—KNAPP'S TABLE OF PERCENTAGE OF FAILURES TO FIND GROWTH

	1889.	1891.	1890.	1905.	Total
Removed	18	28	265	160	471
Not removed	5	10	115	59	189
Percentage of failures.....	22	26	30	27	29

TABLE 6.—KNAPP'S TABLE OF PERCENTAGE OF FAILURE TO REMOVE

	1889.	1891.	1890.	1905.	Total
Removed	18	28	265	160	471
Not removed	6	20	224	107	357
Percentage of failures.....	25	41	46	40	43

Besides the cases of operations for cerebellar tumors recorded by Mills and Frazier, several additional cases have come under our notice as follows:

Stewart³ reports forty cases which he has analyzed. Wharton Sinkler⁴ also reports three cases. In two instances an operation had been performed. In these two cases one patient, who had a cyst, recovered. He was in perfect health seven months after the operation. Dercum⁵ also discusses the subject.

Martens and Seiffert⁶ report the case of a boy of 13 on whom an operation was performed for removal of a cerebellar tumor. The patient died after a few hours. An autopsy revealed a tumor, a large glioma, in the fourth ventricle.

Savage⁷ furnishes notes of eleven cases, ten of which were relieved by trephining.

Funkenstein⁸ reports five personal cases as follows: (a) patient died from operation; (b) patient died without operation; a solitary tubercle on the right auditory nerve; (c) neurofibroma on the auditory and facial nerves; (d) sarcoma of the cerebellum; (e) encephaloma of the left posterior fossa.

Becker⁹ reports a case of tumor removed from the left pontocerebellar angle. The patient died in three hours after the operation. A beautiful plate shows the tumor *in situ* and another, the brain with the tumor removed.

W. B. Warrington¹⁰ reports a case of an operation for the removal of a cerebellar tumor. The tumor was not found and the patient died. An autopsy discovered a sarcoma the size of a pigeon's egg in the right lobe pressing on the middle of the medulla.

Poppert¹¹ reports one case of successful removal and one of a partially successful removal. From one patient a woman, aged 28, a tumor was removed from the cerebellum, and four weeks later, at the time the report was made, she was doing well and greatly relieved, although the operation was done too late to improve the eyesight.

B. Sachs¹² reports three cases of cerebellar tumor in which operations were performed. Two of the patients succumbed. In the third case the patient was greatly relieved, although the tumor could not be found at the operation. He remarks: "Cerebellar surgery is in a sad plight." He believes that "the cure of cerebellar tumors is difficult to attain except in a small proportion of cases," but he believes that much relief may be afforded by trephining operations.

Ascoli¹³ reports the case of a boy, aged 14, with cystic gliosarcoma in the right lobe of the cerebellum

3. Stewart: *Brain*, 1904, p. 522.

4. Sinkler, Wharton: *Three Cases of Cerebellar Tumor*, THE JOURNAL A. M. A., Sept. 26, 1908, II, 1057.

5. Dercum: *Jour. of Ment. and Nerv. Dis.*, 1906, p. 169.

6. Martens and Seiffert: *Berl. klin. Wchnschr.*, Aug. 10, 1908.

7. Savage: *Berl. klin. Wchnschr.*, Aug. 10, 1908.

8. Funkenstein: *Mitt. a. d. Grenzgebt.*, xliii, 1732.

9. Becker: *Deutsch. Arch. f. klin. Med.*, lxxxix, p. 6.

10. Warrington, W. B.: *Med. Chron.*, 1905, p. 144.

11. Poppert: *Deutsch. Med. Wchnschr.*, 1907, No. 15, p. 613.

12. Sachs, B.: *Med. Rec.*, Dec. 22, 1906.

13. Ascoli: *Corriere San.*, Milan, xviii, 172.

2. Knapp: *Boston Med. and Surg. Jour.*, Feb. 1, 1906.

3 cm. from the surface and a little anteriorly. Two operations were done two days apart. The tumor was not removed entirely. The patient died fifteen days later.

He reports another case¹⁴ of a woman, aged 23, who was operated on early in August, 1906, for cerebellar tumor. No tumor was found at the operation, but a few drops of pus of tuberculous character was discovered. By the middle of August the symptoms again became exaggerated. The patient died September 20. An autopsy revealed a tuberculous node in the left cerebellum and a tuberculous area on the surface on both sides of the medial lobe superior.

With this brief survey of the literature, we desire to give the clinical and pathologic records of a case observed by us, in which a tumor was removed from the cerebellum, the patient surviving the operation and exhibiting complete relief from headaches and vomiting and very great improvement of vision and considerable improvement in his gait.

The patient was admitted to the Allegheny General Hospital Jan. 4, 1909, having been referred to Dr. Diller by Dr. J. J. Emmens, of Somerset, Pa., who had previously made the diagnosis of cerebellar tumor.

CASE REPORT

Patient.—A single man, aged 20. His father is supported by charity. At the age of 2 the patient was given out by the Children's Aid Association to a farmer. He was healthy and strong and after he grew up did good work about the farm. At the age of 18 he secured his release and wandered about a good deal; and it is thought he was rather wild. Six months ago he returned to the farm. For some time before his return he had been suffering from headaches; and soon after he came back to the farm he fell quite a distance from a hay wagon and struck his head. But it appears he had headaches before this accident. Three or four months ago the headaches became very severe and very frequent. For three weeks past he has had very severe headaches located at the top of the head and pain running down the spine. His head now became drawn forward and to the left. He became intolerant of light; and his pupils were dilated. He had lately been subject to many dizzy spells and very marked right-sided sweating. There has been no fever. Hearing in the right ear is somewhat impaired. He is still able to read the newspaper.

Examination (Dr. Diller).—The posture at once commands attention. The patient's head is bent forward on the chest and drawn toward the left and rotated on its axis toward the right. Efforts to straighten it up cause great pain. He assumes this position to relieve himself of pain. He walks in a slow, laborious fashion with feet wide apart; his gait is very weak and uncertain. But he can walk the length of the ward with a little assistance. Four or five times he staggered so that he had to be supported, and at times he always staggered toward right. At a subsequent test he staggered to the left two or three times. He is generally weak and wretched, but I find no particular palsies of the trunk, arms or legs; and I note no cranial nerve palsies. In a mental way he exhibits nothing significant except that he is overly quiet and subdued and has a desire to be let alone. He is perhaps a little dull.

Eyes: There appears to be marked neuroretinitis in the right eye. I could not get a satisfactory look at the left eye-ground.

Ears (Dr. Barndollar): Examination is negative. Hearing in both ears is normal.

Diagnosis.—The case appears to be one of cerebellar tumor. The evidence as to which side of the cerebellum is involved does not seem clear.

Course of Disease.—Jan. 18, 1909. Dr. Heckel found 5 D. of swelling in each nerve—double optic neuritis. The patient

has had several attacks of vomiting at the hospital. His headaches appear to be very severe and are located chiefly at the back of the head. His head is rotated to the right side, but pushed forward to the left.

January 26: Ben's headaches continue to be severe and he complains that his eyesight is rapidly failing; that he can hardly see to read at all, even large print.

This unfortunate man presents a most pitiable sight. Sitting up in bed, with his head drawn forward, his manner and appearance indicate the truthfulness of his assertion that the head pains are unceasing and very severe most of the time. He has vomited frequently and obtained very, very little sleep since he entered the hospital because of the pain. The poor fellow gladly welcomed an operation, although its serious character was made plain to him.

Operation (January 27).—Dr. Gaub operated today, exposing both lobes of the cerebellum. The right lobe was found more protruding than the left and softer in consistency. About one-third or one-half of this lobe was cut away and the finger thrust forward to the anterior margin of the cerebellum; and a tumor was withdrawn somewhat almond-shaped and about as large as a hickory-nut. The patient stood the operation well, but the night following the operation his pulse became very rapid, going up to 190 by midnight; and for several hours it was more rapid than this and could not be properly counted. By the next day it was down to 136; but the pulse has continued to be more or less rapid even up to the present time (March 16).

DESCRIPTION OF OPERATION BY DR. OTTO C. GAUB

The patient was placed on his left side and a sandbag placed under his head. He was supported in this position by means of a reinforced plaster bandage passing around the upper part of the right arm and attached to an ordinary leg-holder. This posture gave a fair operative field and was comfortable to the patient, owing to his fixed head flexion. Ether anesthesia was used.

A cross-bow incision was made, the bone over both inferior occipital fossæ was removed by means of chisel and rongeur forceps, impinging on the foramen magnum, leaving a strip covering the occipital sinus. The bone of the right side was of the thickness of ordinary parchment paper, while that of the left side was three times as thick. The dura was opened by a crucial incision over both lobes of the cerebellum. Pronounced bulging of the right cerebellar lobe was noticed immediately on exposure, and its color appeared deeper than its fellow; its appearance was suggestive of softening. Palpation of both lobes demonstrated marked softening of the right lobe; and an attempt to introduce a spatula underneath produced a tear of its substance. It was readily seen that a satisfactory exploration was impossible without destroying the right lobe; so the index-finger was introduced and at a point, judged to be at the anterior surface of the right lobe, about its middle, a smooth rounded mass the size of a hickory-nut, of firmer consistency than the surrounding cerebellar tissue, was felt and then enucleated.

The removal of the tumor and softened cerebellar tissue was followed by a free hemorrhage controlled by packing with iodoform gauze. Up to this time the patient's condition was satisfactory; but following the removal of the tumor with its accompanying hemorrhage his condition became grave. The blood pressure fell to 90 mm. of mercury. A rapid closure of the wound was made with catgut for muscle and fascial layers and interrupted silkworm-gut sutures for the scalp. The incision over the right lobe was closed last, after the removal of the gauze tampon; no drainage.

Eight hours following the operation, the patient's condition was unsatisfactory. He lay on his left side, his head supported by one pillow. The dressings were soaked with blood, the skin relaxed and perspiring, pulse 140. He was propped up, supported by a back rest and grain 1/120 atropin sulphate administered, following which the pulse rate became increasingly rapid so that it was impossible to count, although each pulse move was distinct.

I believe this extreme rapidity to have been due to the atropin. The further progress of the patient had been detailed.

14. Ascoli: Policlinico, Rome, 1907, xiv, 141.

Immediately following the operation there was a very slight rise of temperature. By the 29th the temperature was normal and remained so except that on February 8 there was an elevation to 101.6.

FURTHER NOTE BY DR. DILLER

On the 29th it was noted that the pulse was intermittent and it continued so for several days, being very markedly so at times.

On February 7 the patient's respirations suddenly became rapid, going up to 40 per minute and his temperature to 101.6; and he seemed a little dull. I found a rough murmur over the heart which was apparently mitral-regurgitant. Dr. Emmens informed me that he examined the patient's heart carefully just before he came to the hospital and found no evidence of valvular heart trouble. When the patient left the hospital this murmur was much less marked.

Excepting the above complications the patient's condition following the operation has been extremely satisfactory. He experienced complete relief from headaches and vomiting; the optic neuritis subsided.

One of the most interesting and gratifying features of the case was the rapid subsidence of the optic neuritis, which began the day following the operation and continued for several days; and there was a corresponding improvement in vision, which went hand in hand with it. Optic neuritis had been noted by Dr. Emmens before the patient entered the hospital; and the examination at the hospital on January 5 revealed its presence in a high degree. The week preceding the operation the patient's vision was rapidly failing; so that the

Fig. 1.—Gross specimen. Fig. 2.—Section of gross specimen, from photograph.

day before the operation he could hardly read the largest letters in the advertisements of the newspapers. Dr. Heckel observed the patient at frequent intervals following the operation and has kindly furnished us with the subjoined report, which speaks for itself.

EXAMINATION BY DR. E. B. HECKEL.

"First examination, Jan. 18, 1909: A typical papilledema (choked disc) with an elevation of the optic disc of five diopters, above the fundus, in each eye.

Jan. 26, 1909 (day before operation:)

O. D. about 6 diopters.

O. S. about 5 diopters.

First day after operation:

O. D. about 5 diopters.

O. S. about 4 diopters.

Second day after operation:

O. D. about 3 diopters.

O. S. about 3 diopters.

Fourth day after operation:

O. D. about 3 diopters.

O. S. about 2 diopters.

Fifth day after operation:

O. D. about the same.

Sixth day after operation:

Outline of optic disc just beginning to show in left eye.

Seventh day after operation:

Optic disc level with fundus.

Outline of optic disc in O. S. more pronounced.

Eighth day after operation:

About the same.

Fourteenth day after operation.

Outline of optic disc more distinct.

Sixteenth day:

Optic disc still blurred in O. D.

O. S. quite normal.

March 16, 1909, R. V. = 20/30; L. V. = 20/40.

Error of refraction, O. D. + 0.50 D. S. = + 0.50 D. C. ax. 75°.

O. S. + 0.50 D. S. = + 0.50 D. C. ax. 90°.

p. a. Jaeger N. 1 with O. D.

p. a. Jaeger No. 2 with O. S.

Fig. 3.—Low-power view of section of specimen; ocular 4, objective 1; from microphotograph.

"The optic disc of the O. S. is a trifle paler than the optic disc of the O. D.

"One of the most striking features of Ben's eyes was the greater elevation of the optic disc in the right eye; and the swelling was slower in disappearing than in the left eye. This point of the greater swelling in one nerve may be an aid in locating the tumor, i. e., right or left-sided."

REMARKS BY DR. DILLER

Ben passed an examination for train service on the Baltimore and Ohio Railroad within the last year.

The patient himself noted some improvement in his vision

Fig. 4.—View of section of specimen; ocular 4, objective 5; from microphotograph.

the second day after the operation and steady improvement from then afterward during the next three weeks, at the end of which time he could readily read all the ordinary print in the newspapers.

The attitude of the head which had been so striking was no longer noted. The patient complained of no dizziness or nausea, or indeed of any distressing symptoms whatsoever.

It was very cheering to hear the patient's response to inquiries. "How is your headache?" "I have no headache." "How is your sight?" "Why, that's good now." At the time that the patient left the hospital, on March 22, he was comfortable and cheerful, but not yet able to walk more than a short distance; and he was still quite uncertain in his gait. But even his gait was rapidly improving. The heart murmur was still quite audible.

Ben left the hospital, March 22, about eight weeks after the operation. After he had been home six weeks he wrote a very cheerful letter, reporting on his condition, from which we abstract the following: "I got here all right. I have been visiting ever since. I am feeling pretty good at present. I am walking around every day to get exercise."

A more recent report from Dr. Emmens also assures us that the patient continues to do well.¹⁵

The tumor was given to Dr. F. Proescher, pathologist of the Allegheny General Hospital, for examination, and he reported as follows:

PATHOLOGIC REPORT BY DR. F. PROESCHER

The specimen is a very soft round tumor, 4 cm. in diameter and 2 cm. thick. It was partly surrounded by a red fibrous capsule. When cut in two its periphery was reddish-yellow.

Fig. 5.—Tumor cells infiltrating walls and lumen of vein.

opaque, very soft and rich in blood vessels. The center of the tumor had the consistency of gelatin, was grayish-white and transparent and contained many hemorrhagic areas.

Microscopic sections showed a polymorphous sarcoma with myxomatous areas. It contained many large and small blood vessels, some of which the sarcoma perforated; and there were multiple hemorrhages.

Diagnosis.—Myxosarcoma teleangiectatum.

The features of this case which appeared to us as noteworthy are:

1. The excellent recovery of the patient after the operation and his great improvement.
2. The position of the head, bent forward to the left on the chest and rotated to the right. This is against the common statement that in cerebellar tumors the head is drawn backward.
3. The very rapid subsidence of the optic neuritis following the operation.
4. The fact that the optic neuritis was greater on the right side—the side of the tumor—than the other side.

¹⁵ The patient was shown at the meeting of the Section on Nervous and Mental Diseases of the American Medical Association at the Atlantic City meeting, June, 1909. At this time he was bright mentally, entirely free from headaches and vomiting, and able to read readily an ordinary newspaper; and he walked with ease an ordinary pace, exhibiting but slight trace of the marked ataxia which he had formerly had. The right knee-jerk was normal; the left, somewhat exaggerated. The pupils reacted to light; the fundus was not examined. The patient's head was held in nearly normal position, although movements were somewhat, not greatly, restricted. In every way he was quite comfortable. The wound had entirely healed.

5. The great practical value of exposing the cerebellum over both sides; this, not only because it is frequently difficult to decide on which side a tumor is located, but because such an opening allows for far better manipulation and exploration of the cerebellum. Without this double opening the tumor in this case could probably not have been enucleated.

6. The fact that considerable manipulation and even destruction of the cerebellar lobe is compatible with life.

7. The position of the patient on the operating table and the surgical technic are of the greatest importance.

8. The cardiac complication—the apparent development of an endocarditis which seems to have disappeared now.

9. Right-sided sweating.

Westinghouse Building.

ABSTRACT OF DISCUSSION

DR. B. SACHS, New York: The matter of greatest importance is to determine the exact location of the cerebellar neoplasm; and a considerable experience has led me to the conclusion that accurate localization can only be made by the observation of a few especial and very delicate symptoms. The attitude of the head is one of the most important of all signs. I have found it of importance in a considerable number of cases; and my impression has been that for the most part the head inclines toward the side on which the tumor is situated, although there may be cases reported in which the opposite has been true. Moreover, the occurrence of vertigo on looking to one side or the other sometimes leads to a differential diagnosis. And in that case, too, so far as my experience goes, the vertigo becomes extreme if the person looks also toward the side on which we believe the tumor to be situated and where it is subsequently found. Another point of importance as an aid to diagnosis in cerebellar cases is the occurrence of intense nystagmus. While nystagmus is an associated symptom in neoplasms in various locations, there is very intense nystagmus associated with this class of neoplasms that I think may be considered as evidence of cerebellar tumors in contradistinction to tumor in other parts of the brain.

Then the minute differences between the reflexes (and all these symptoms are apt to be slight), particularly slight ataxia in one member as compared with the member on the opposite side of the body, are important.

Dr. Diller has been extremely fortunate in his diagnoses; for in a series of twenty cases of cerebellar neoplasm it has been my misfortune not to be able to localize the neoplasm in any spinal part of the cerebellum and yet the cerebellar operations will not be such an infrequent occurrence, because nowadays we are impelled to exploratory operations in order to save vision. For that reason I do not hesitate in any case in which I suspect a cerebellar neoplasm to have the first exploratory operation done for the purpose of saving the vision if possible; and incidentally have that exploratory operation done in such a way that it would be performed on the side to which the symptoms appear to point. In that way we may sometimes have all the good fortune that Dr. Diller has had in this case.

DR. MAX MAILHOUSE, New Haven: A year ago I was fortunate enough to see two cases of cerebellar tumor within three months; and I had two particularly important aids to localization in these two cases: One was ataxia shown by the finger to nose test on the same side as the tumor, which ataxia is now considered to be a homolateral symptom. The other was awkwardness in the pronation and supination of the forearm, present in both cases, that awkwardness being on the same side as the tumor. Those two phenomena aided me in localization, and the tumor was found in each case where these ataxic conditions indicated.

One of the cases unfortunately was very late in coming to hand. It had been diagnosed by the general practitioner as neurasthenia and the patient had been sent into the country and rusticated for three or four months before reaching my

hands. In both of these cases the early and marked development of choked disc and the persistent and early development of vomiting helped to point toward the cerebellum as the seat of the lesion.

DR. GEORGE B. MOLEEN, Denver: Nothing has been said with reference to the utilization of the x-ray in these cases. I feel somewhat hesitant in bringing that up, although in three cases in Denver prior to doing either an exploratory or ameliorating operation, I had the side in which I suspected the tumor to be present x-rayed, keeping that side closest to the plate.

In two instances I obtained very good shadows. Both of the patients were operated on and the diagnosis and location verified. One of these cases, like the one mentioned by the previous speaker, was diagnosed as a case of neurasthenia, but it had all the evidences of a left-sided cerebellar tumor with secondary atrophy incident on the choked disc. In that case the patient was placed on a plate and photographed with the left side down. The skiagram showed a very clear outline.

Those tumors which are, however, more deeply seated should not be expected to give a clear and definite outline, as compared with those which are located near the cortex. Naturally, the line of such tumors will be more or less diffuse. But with those located near the cortex if that side of the head is brought next to the plate, the skiagram will furnish a very important aid in determining the location of the tumor.

DR. B. R. TUCKER, Richmond, Va.: I have a case which I think is undoubtedly one of cerebellar tumor, in which I have advised operation, but I am very uncertain, and in fact, completely in doubt as to which side the tumor is on. The patient is a child about 4 years old who has nystagmus, nausea, vomiting, and optic neuritis which had gone on to atrophy. The position she takes is unique. She has spells of drowsiness, and then she will kneel on the floor, put her head on one side, resting it on the floor, sometimes on the right and sometimes on the left, and drop off to sleep instantaneously. I have not been able to find another instance of a similar position assumed by the head and also by the body.

DR. T. M. T. McKENNA, Pittsburg: There are three suggestive points in diagnosis which have not been brought out, but which I noticed in the case which is under discussion. One point is that while the patient had severe general headache, he stated that the most intense pain was on the right side and toward the back part of the head. The second point is that on palpation of the head, there was distinct tenderness on the right side; the third point is that there was unilateral sweating on the right side; all suggesting that the tumor probably was in the right cerebellum.

DR. T. DILLER, Pittsburg: I would be the last to minimize any aids that we would get in the way of localization, both as to whether a tumor is in the cerebrum or cerebellum and, if in either of these, in which portion. But the patient was not examined, I confess, with quite the same precision that he would have been ordinarily: for, as I said, he was so miserable and so very wretched that we could not examine him quite so thoroughly in all respects as would have been desirable. I am glad Dr. McKenna mentioned these two or three points that I had forgotten in my brief summary of the case. A very interesting point was this unilateral sweating.

We should get all the aid we can and locate the tumor as exactly as possible; but after that from a practical point of view I think we ought always in cases of cerebellar tumor to open the skull over both lobes of the cerebellum. This allows for a greater facility for exploration and also for a possible error as to the side the tumor is on; and since this is necessary for surgical purposes, it makes it less necessary to localize a tumor exactly in the cerebellum.

I may say that since this case I have had another that was not so fortunate. The tumor was correctly localized in the cerebellum on the right side, on the basis of the marked masseter involvement, as well as the sensory involvement of the fifth nerve, and although the operation was done with the same care and skill as in the other case, the patient succumbed very shortly.

LICHEN PLANUS SCLEROSUS

WITH REPORT OF A CASE*

JAY FRANK SCHAMBERG, M.D.

AND

ROSE HIRSCHLER, M.D.

PHILADELPHIA

Patient.—Miss L., American birth, aged 19; height about 5 feet; weight about 90 pounds; hair brown; eyes blue; skin fair with slight freckling; intelligent. Parents Irish, living and well. Several brothers and sisters living and well; one brother died in infancy of bowel trouble; no consumption in family; no skin disease; no history of syphilis.

History.—The patient had none of the infectious diseases that she could recall. About a year before examination she had lumbago; since then had had slight attacks of rheumatism. She was not nervous in any way, i. e., her temperament was not neurotic. The patient slept well and ate well; she was actively engaged in work and was inconvenienced in no way by the skin disease present. She had never had any other skin affection. The disease under consideration made its appearance about three years before the first examination. It is possible that it might have begun somewhat earlier, as the

Fig. 1.—Lichen sclerosus, showing whitish papules and keratotic plugs.

lesions when first observed by the patient were already large. The patient insisted that the spots were white from the very beginning and that no reddish coloration was at that time present. The palmar surface of the left wrist was first attacked and later the corresponding area of the right wrist. Scant, scattered lesions had since appeared on the dorsal surfaces of the hands and fingers. A patch was also present on the posterior median aspect of the neck.

First General Examination.—The eruptive elements consisted of flat, shining, angular papules of a whitish hue. The discrete lesions were of a brilliant snow-white or bluish-white color; the confluent patches exhibited more of an opaque dead-white tint. The papules varied in size from a pinhead to a millet-seed or larger. The smaller papules had a smooth surface and were but slightly, if at all, elevated above the level of the skin. On palpation, they were not more resistant than the surrounding integument. The larger patches were slightly raised above the skin, and somewhat resistant to the touch. The papules were irregularly faceted, their angularity being produced by the exaggerated furrows which constituted their boundaries.

* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.