

accommodation for that distance, may be better determined than by the Maddox rod, as it is not so easy to accommodate for a light. The patient might accommodate for the red streak of light which, seen through the rod, often appears to be at a different distance from the light, and thus over- or under-stimulate convergence.

DR. G. C. SAVAGE, Nashville, directed attention to some points of vital importance. First, no test of the lateral muscles, he said, is worth anything when made under the influence of a mydriatic. The relationship between convergence and accommodation is such that if one takes away the accommodative power the converging power is disturbed, and one can not get reliable results.

Second, judgment of verticality, horizontality and obliquity is a gift and not an acquisition. He disagreed with Dr. Reber's statement that women can not judge this as well as men; a child can judge it as well as a man and so can a woman. A third point is this, that there is a distinct meaning when there is exophoria in the near and not in the distance, with young people, and if the physician does not understand that and prescribes full-strength convex glasses under a mydriatic he gets the patients into trouble. If a patient has exophoria in the near and not in the far, that patient has a powerful ciliary muscle, which, with a slight impulse from the brain, will focus rays of light from the page easily. Slight excitation of the accommodative center produces a correspondingly slight excitation of the converging center, and hence the feeble convergence. Now if the ophthalmologist prescribes full-strength convex glasses for a hyperope who has exophoria in the near and not in the distance, that patient will never accept those glasses. They will cause suffering until removed. If to such a patient, with, say, diopter of hypermetropia, the physician gives a one-diopter minus lens, he stimulates accommodative effort and so stimulates the convergence center, and comfort comes to the patient.

DR. F. S. DE LUE, Boston, said that in testing his cases for errors of refraction, he examines all for external muscle insufficiencies, and is surprised at the frequency with which exophoria appears when the hyperphoria has been relieved. Generally, the balance soon becomes re-established, and these patients do not complain, or if they are disturbed, it is not for distance, as a rule, but for near work, and a prism, base in, generally for near only, used a short time, gives the needed relief.

DR. OSCAR WILKINSON, Washington, said that there is a certain class of cases in which we get the most gratifying results from the use of prisms. He does not believe in using prisms for every case of exophoria, but when a patient fails to get relief from the correction of the error of refraction and comes back with asthenopia symptoms immediate relief can often be given with 1 or 1.5 degree prisms, base in. In regard to exophoria increasing under the use of prisms, he does not believe we will, as a rule, observe any appreciable increase in the exophoria from the use of the prism if the examination is made with sufficient care in the first instance. It should be made several times under different circumstances, i. e., when the patient is rested and when tired. In the treatment of exophoria an operation is indicated when all other means fail. In cases with more than 10 degrees of exophoria, tenotomy is the operation of choice; in cases with less amount the tucking or advancement operation is indicated.

DR. WENDELL REBER, Philadelphia, said that when he stated that he thought low degrees of exophoria were mostly productive of symptoms it was because they are overcome. Some patients with 3 degrees have more intense symptoms than those with 12 degrees. He called attention also to the fact that prisms for permanent use are not ordered for many cases. It is one of the last resorts and he submits that prisms for constant wear may be absolutely justifiable even though the exophoria does sometimes increase. He agreed with Dr. Duane that the cover test is the most valuable for testing exophoria for distance, but does not agree that it is for the near point. He thinks the small electric light is very valuable. He said that he wished he could feel, as Dr. Stevenson does, that we do increase the power of muscles by exercise, but he does not. He thinks that we simply teach these patients to use a coördination which they already have. Frequently the exophoria decreases and the symptoms subside.

## CEREBRAL DECOMPRESSION.

### PALLIATIVE OPERATIONS IN THE TREATMENT OF TUMORS OF THE BRAIN, BASED ON THE OBSERVATION OF FOURTEEN CASES.\*

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Palliative operations in cases of brain tumor are not new, and the temporary benefits to be derived in this way have been fully recognized by many physicians during many years. It has seemed time well spent to examine some of the reports of cases treated by trephining, or other method of opening the skull, for the relief of pressure when a tumor could not be localized, or if localized could not be removed. Unquestionably many cases have been omitted, and yet I have collected sufficient to demonstrate that palliative treatment has an important place in cerebral surgery.

#### REVIEW OF LITERATURE.

Annandale<sup>1</sup> said, in 1894, that more than twenty years previously he had opened the skull of a patient whose symptoms were those of general brain pressure and, although no special condition was found, temporary relief was marked. Another case of this kind, he says, was operated on by Sir Joseph Lister in the same wards with success. In 1889, Annandale removed a piece of bone from the skull because of intense headache, following an injury of the head years previously. No abnormal condition was found, although the dura was incised. The patient made an excellent recovery and was perfectly cured. Annandale remarked that when no localized symptoms of brain tumor exist an exploratory operation may be performed, and experience has shown that in some of these cases the operation has been useful in taking off general pressure and in a few instances has even been followed by shrinking or degeneration of the growth. Again, a growth may give rise to effusion of fluid or to hemorrhage, and the symptoms caused by these conditions may be at least temporarily removed by the operation.

Sahli,<sup>2</sup> in 1891, spoke of improvement from palliative operations. The tumor in one case was supposed to be in the cerebellum. Vision improved and headache disappeared after a palliative operation. The patient (a boy) died some months later and no necropsy was obtained. Sahli thinks that two trephinings remote from each other give more relief of pressure than one. Sometimes Nature performs a palliative operation, what he calls *Selbsttrepanation*. In consequence of the pressure the skull becomes thin at the region of the Pacchionian bodies and openings may occur, and in one case he saw the brain protruding through several such openings.

The palliative operation, he thinks, is not ideal, is not without danger, and improvement is only temporary. In one case of prolapse of the brain he observed unconsciousness immediately followed by death. Acute prolapse of the brain may impair the function of the rest of the brain. He recommends small trephinings in preference to large.

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session.

1. Annandale: *Edin. Med. Jour.*, January-June, 1894, p. 898.

2. Hermann Sahli: *Volkmann's "Sammlung klin. Vorträge Inneren Medizin,"* Nos. 1 to 29, 1890-1894, p. 300.

In 1891, White<sup>3</sup> described a number of cases of epilepsy in which improvement followed operation, although nothing abnormal was found.

In 1893, Horsley<sup>4</sup> said that the removal of excitatory symptoms by opening the skull is a marked phenomenon, convulsions ceasing. In one of his cases in which the diagnosis of tumor of the middle cerebellar peduncle was made, the skull was opened only to relieve the pressure, and the cerebellum protruded almost an inch through the trephine hole. The symptoms of tumor soon disappeared, and six months later the man felt perfectly well. He survived eighteen months, and during this time had few attacks. Only a small cavity was found.

Horsley thinks that some tumors are so interfered with in their nutrition by opening the skull and suddenly altering the pressure therein that they forthwith degenerate. In another of his cases the tumor was too large for removal, but the patient survived for over two years, with disappearance of the attacks and improvement of the hemiplegia. The tumor at the time of the operation was obviously malignant and rapidly growing, but had later undergone complete destruction by the mere exposure at the time of operation. Such a result, he says, can not be anticipated or expected as likely to follow, but it is an argument in favor of opening the skull for the purpose of palliating a condition which can not be cured.

Horsley says, also, that he has found in every case the effect of opening the skull has been to remove the headache and, further, that in cases where it was known before operation that the tumor could not be removed relief from severe pain afforded by opening the skull persisted until the patient died. The simple and safe procedure of opening the skull should be undertaken when drugs fail. At the Berlin Congress Horsley pointed out that opening the skull caused the swelling of the optic discs to subside, and that the subsidence may proceed steadily to complete recovery, provided atrophy has not previously begun. If atrophy has commenced the condition is hopeless. Vomiting is dependent on the degree to which intracranial tension is raised, and, as a rule, this symptom disappears when the skull is opened.

Jaboulay,<sup>5</sup> in 1893, obtained good results by trephining in a case of tubercle of the brain without opening the dura. The prognosis from trephining, he thinks, is better the more circumscribed and superficial the lesion.

Caton and Paul<sup>6</sup> trephined the skull in a case of acromegaly in 1893. The dura bulged in the opening. The operation relieved the headache, and the remaining three months of the patient's life were comparatively comfortable.

Macewen<sup>7</sup> did a palliative operation in 1889 in a case with symptoms of cerebellar tumor. The patient experienced great relief. After a week tuberculous tumors were removed from the cerebellum.

Taylor<sup>8</sup> reported a series of cases of brain tumor to show that there is almost invariably a subsidence of optic neuritis after operation whether the tumor is removed or not. This fact, he says, was known to Horsley so long ago as 1888. In discussing Taylor's paper Horsley said that if there is any atrophy present no amount of reduction of pressure within the skull will produce the slightest change or afford the slightest relief in re-

spect of the loss of vision. If there be commencing atrophy, after operation the neuritis that may be present will disappear, but the atrophy is permanent; opening the skull, therefore, is not justifiable if the atrophy is well marked. Horsley was probably referring to the operation only in so far as vision is concerned, as the operation may relieve some of the other symptoms, even though it may be too late to restore vision. The optic neuritis may disappear, Horsley says, even though the dura is not opened.

In a case reported by Keen<sup>9</sup> in 1894, the diagnosis of intracranial tumor was made, but the growth could not be located. Trephining was recommended with a view of relieving intense headache. The tumor could not be found. The bone was not replaced, and, although the brain bulged greatly, headache and hallucinations entirely disappeared, and the man became a quiet and tractable patient. He died four and a half months after the operation, having been much relieved during this time. The operation was performed in 1892. In another case, also, much benefit was obtained by a palliative operation.

Bruns,<sup>10</sup> in a case of brain tumor in which the tumor could not be found at operation, improved the patient's condition by opening the skull. By the end of the third week very little choked disc remained, attacks of blindness no longer occurred, headache was much less severe and vomiting ceased. Similar improvement he had noticed in two other cases of brain tumor after trephining.

Byron Bramwell,<sup>11</sup> in 1894, said that he had advocated trephining for the relief of symptoms in his book, "Tumors of the Brain," published eight years previously, but that he would advocate the operation still more strongly in 1894 in cases in which there is a great increase of intracranial pressure and drugs have failed. When he published his book he had not been aware that Grainger Stewart or any one else had recommended the operation. In many cases the headache is intense, and it has been shown that in some of these cases sudden death occurs, apparently as a result of the mere severity of the pain and sudden inhibition of the action of the heart. In other cases in which the intracranial pressure is greatly increased, the patient dies suddenly in an epileptic fit or as the result of failure of respiration. Opening the dura reduces intracranial pressure and relieves headache, optic neuritis and other symptoms.

In 1894 Kammerer<sup>12</sup> reported a case of supposed tumor of the brain in which double trephining was done for the relief of pressure. The headache disappeared, vomiting ceased for several weeks and then occurred occasionally. The motor power of the right side (previously this side was paretic) improved and some sensation returned. The dura was not incised.

Wyeth remarked that he had trephined in two cases with symptoms of brain tumor and, finding no tumor, had sewed up the dura, but had not replaced the bone: improvement had followed the relief of pressure.

Sänger,<sup>13</sup> in 1894, reported a case of brain tumor in which after opening the skull and dura prolapse of the brain with improvement in the symptoms occurred.

In one of the cases of tumor reported by E. Albert<sup>14</sup> in 1895, in which palliative trephining was done, headache disappeared, but vomiting persisted. The dura

3. White: *Annals of Surgery*, August and September, 1891.

4. Horsley: *Brit. Med. Jour.*, 1893, No. 2, p. 1365.

5. Jaboulay: *Arch. provinc. de Chir.*, vol. II, 1893.

6. Caton and Paul: *Brit. Med. Jour.*, Dec. 30, 1893, p. 1421.

7. Macewen: *Brit. Med. Jour.*, Dec. 23, 1893, p. 1367.

8. *Trans. Ophthal. Soc. United Kingdom*, vol. xiv, 1893-4, p. 105.

9. Keen: *Amer. Jour. Med. Sci.*, January and February, 1894.

10. Bruns: *Neurolog. Centbl.*, 1894, p. 20; also, 1893, p. 389.

11. Bramwell: *Edin. Med. Jour.*, January to June, 1894, p. 1067.

12. *Annals of Surgery*, vol. xix, January to June, 1894, p. 685.

13. Sängner: *Neurolog. Centbl.*, 1895, p. 472.

14. E. Albert: *Wien. med. Woch.*, 1895.

probably was not opened. Later trephining was done on the other side of the head, but vomiting persisted. The relief afforded was in regard to headache and might have been greater if the dura had been opened.

In another case in which trephining was done for brain tumor the dura was punctured. Headache became at once less severe, but the improvement was only temporary. In another case after trephining apparently without opening the dura, vision improved and headache and vertigo disappeared. The symptoms returned and the dura was opened. The operation was not very successful as a palliative means.

Schlesinger,<sup>15</sup> in a case of brain tumor, had a large protrusion of the brain as a result of the operation. The protruded portion could not be replaced, nor was it excised, and when the patient was presented he had a subcutaneous tumor on his head as large as a fist. The general condition improved as a result of the operation, the palsy diminished, the Jacksonian convulsions ceased on the third day after the operation, the choked discs and headache disappeared. Seven weeks had elapsed since the operation at the time of presentation. A later report of this case states that the improvement lasted several months and then the symptoms returned rapidly and death soon resulted. The entire right cerebral hemisphere was replaced by a gliosarcoma.

Decompressive trephining, a term employed by Jaboulay,<sup>16</sup> performed for brain tumor, according to this author, has proven to be of some benefit, more often not. When done for the relief of inoperable tumors, the results are not always brilliant. He speaks of astonishing results produced by trephining in the cerebellar fossa in a case of basal tumor; the pain ceased and the vision improved. The patient lived four and a half months after the operation. Jaboulay seems to believe that the relief in palliative operations is greater for tumors of the cerebellum and adjoining parts than for tumors of the cerebrum.

Broca and Maubrac<sup>17</sup> ascribe to Horsley the honor of being the first to describe carefully trephining as a palliative operation in brain tumor, although scattered references to the subject are found in the literature, and they refer to Annandale and Lister. Horsley recommended making a large opening in the skull without opening the dura. Sahli, they say, recommended excision of the hernia that is produced by opening the dura, especially as the portion of the brain involved in the hernia is impaired in its function. They say that Kocher did operate in this way on a child in the service of Sahli for a tumor not localized, but probably in the cerebellum. A hernia of the cerebellum was excised and benefit resulted. Broca and Maubrac employ the term "cerebral decompression." The palliative operation, they think, exposes the patient to the danger of shock, and when the operation is performed at an advanced period of the disease death is not exceptional. When the patient survives, the most distressing symptoms are lessened or disappear entirely, and, therefore, the palliative operation should be employed. It does not cause more rapid growth of the tumor. Exploratory trephining, when the diagnosis of location has been incorrect, has taught us that cerebral decompression may give important results. These authors express themselves in favor of partial removal of a tumor when the whole can not be excised, but are undecided as regards Horsley's view that partial abla-

tion may retard the growth of the remaining portion. They report two cases of tumor in which palliative operation was beneficial.

In 1895 J. J. Putnam<sup>18</sup> remarked that he knew of one patient who, in consequence of simple opening of the skull, had been free from pain for many years, though blind. He said he had seen relief from pain by large openings in the bone in several cases of brain tumors.

Shultze's<sup>19</sup> results from palliative operation in brain tumor were disappointing, as recorded in his paper published in 1896. He speaks of it as often dangerous, but at times beneficial.

Ludwig Bruns<sup>20</sup> thinks that when the tumor can not be removed or only a small part of it is removable, trephining does not affect the focal symptoms, but causes the general symptoms quickly to disappear if the opening is large. Consciousness returns, headache, vomiting and choked discs disappear. In two of his cases the patients, who had hovered between life and death, had been able to walk again after palliative operations. In one of his cases (glioma of the occipital lobe) improvement lasted several months; in a second case it lasted some weeks. As headache in many cases does not return at all, the recurrence of symptoms is not so distressing and the patient passes into coma. The tumor, by growing through the opening, removes the pressure on the lymph tracts within the skull. Bruns says the opening in the skull must not be too small, and the dura must be opened.

Clarke and Morton<sup>21</sup> report a case of tumor of the brain without localizing symptoms, in which a large area of the skull was removed for relief of intracranial pressure and the dura was not incised. Headache disappeared. They remarked that Beevor and Ballance thought that removal of bone alone without incision of the dura was not likely to relieve intracranial pressure, but they (Clarke and Morton) believe that the actual increase in the bulk of the cranial contents may not be considerable if the tumor is small, and the bulging of the dura mater even to a very limited extent may be sufficient to relieve the increase of the intracranial pressure caused thereby. Clinical evidence in Caton and Paul's case, as in their own, showed distinctly that removal of an area of bone alone is sometimes sufficient. Except for the recurrence of fits five months after the operation, the trephining was of great benefit in Clarke and Morton's case. Optic neuritis subsided, leaving some consecutive atrophy, but the patient had good vision, was entirely free from headache and vomiting, except once during the last series of fits, had recovered his mental powers and had a comfortable existence.

Alfred Wiener<sup>22</sup> reports a case of irremovable tumor. After opening the skull, headache and convulsions disappeared for about two months, but the tumor grew through the opening of the skull, attained considerable size on the outside of the skull, and the symptoms returned. Wiener speaks in favor of trepanning in cases of brain tumor, even when there is no other hope of success than the relief of the general symptoms.

Rohmer<sup>23</sup> has collected a large number of cases in which the palliative operation in tumor of the brain had a beneficial effect on vision.

von Bergmann<sup>24</sup> has called attention to the fact that

15. Schlesinger: *Neurolog. Centbl.*, 1895, p. 702, and 1898, p. 974.

16. Jaboulay: *Lyon Médical*, 1896, p. 73.

17. *Arch. Gén. de Médecine*, February, 1896, p. 129.

18. *Boston Med. and Surg. Jour.*, Jan. 16, 1896, p. 66.

19. Shultze: *Dents. Zeit. f. Nervenheilk.*, vol. ix, 1897, p. 217.

20. Ludwig Bruns: "Die Geschwülste des Nervensystems," S. Karger, Berlin, 1897, p. 229.

21. Clarke and Morton: *Brit. Med. Jour.*, 1896, p. 802.

22. Wiener: *New York Med. Jour.*, Oct. 15, 1898, p. 541.

23. Rohmer: *Revue Méd. de l'Est.*, 1898, p. 525.

24. "Die Chir. Behandlung von Hirnkrankheiten," Berlin, 1899.

in contrast to those cases in which improvement was pronounced after palliative operations for brain tumor others are recorded in which no benefit was obtained, and, indeed, the symptoms were made worse. The improvement is only temporary and in some cases has been of very short duration. The operation also is dangerous. Improvement has occurred after merely opening the skull or after opening the dura also; surgeons, therefore, he said, preferred to remove a large piece of bone and leave the dura intact, but, as cerebrospinal fluid can escape only after the dura is opened, the incision of the dura is a necessary part of the palliative operation. There was a tendency, he said, to stop at a palliative operation, and this must be strongly combated. The future of the surgical treatment of brain tumors lies in the advancement of diagnosis, and in this way the almost thankless palliative operation may be changed to a radical cure. As the escape of cerebrospinal fluid is more important than the opening of the skull, v. Bergmann recommended lumbar puncture. Since v. Bergmann wrote his book experience has shown that lumbar puncture in cases of brain tumor may be dangerous. He has been pessimistic both as regards palliative and radical operations for brain tumor. He gives a long list of cases in which exploratory and palliative operations were done, but almost all of these were attempts at removal of a tumor. In his book (1899) occurs the expression, "decompressive trepanation." He refers to a case reported by Remsden in 1825, in which trephining was done for headache.

Sänger,<sup>25</sup> in 1894, reported two cases to show that under certain circumstances trephining is proper, even when a tumor can not be removed. In 1899 he presented a case of brain tumor in which a palliative operation had been performed. Inunctions were at first effective, but later the symptoms became very severe. An opening was made over the cerebellum and the cerebellar lobe at once protruded; when the dura was incised much cerebrospinal fluid escaped into the bandages for more than three weeks. After the operation vomiting and headache ceased and full recovery seemed possible. Choked disc disappeared, and vision improved so much that the patient was again able to read. The gait also improved and ataxia became hardly noticeable. The operation was performed Aug. 7, 1899, and the presentation of the patient was made Nov. 14, 1899.

Babinski,<sup>26</sup> in 1901, reported a case in which a tumor could not be found after the cerebral dura was opened, although the symptoms had been so severe as to make an operation desirable. The headache and vomiting ceased after the operation, which was performed January 14. The choked discs disappeared by January 30. The presentation of the case was made Feb. 7, 1901. In another case Babinski observed signs of an intracranial disease. The patient had an intermittent discharge of cerebrospinal fluid by the nose. Headache was lessened by the escape of fluid and became more intense when the flow ceased. Nature in this way produced decompression, he says. This case is not unlike some others reported in the literature in which Nature has effected a means of relief for intense intracranial pressure, and bears a resemblance to a case observed by me in consultation with Dr. Laplace and reported in this paper (Case 1).

A. Sänger<sup>27</sup> presented a case in which he had made the diagnosis of cerebellar tumor and an opening was made over the left cerebellar lobe. The improvement was

marked, and Sänger believed that either the tumor had undergone a retrograde change or the condition was hydrocephalus. Of eleven cases in which a palliative operation was performed, the symptoms were much lessened in ten. The time for operation that Sänger chooses is the beginning of impaired vision. When the opening is made over the cerebellum the dura must not be opened immediately.

In 30 cases of brain tumor studied by Leslie Paton<sup>28</sup> that were operated on, useful vision was saved in 22 and the vision was as good as before the operation in 18. It is impossible to draw conclusions regarding his cases in which a tumor was removed and those in which a palliative operation was performed. In the discussion following Paton's paper J. S. Risien Russell said he had no doubt that trephining was of great value in saving sight. He never hesitated to recommend the operation, even in cases in which there was no chance of either localizing the tumor or removing it, for by relieving the intracranial pressure alone sight could be saved. His experience had been that removal of bone alone was not sufficient; it was usually necessary to open the dura in order to obtain sufficient relief of pressure to bring about a subsidence of the optic neuritis. Paton also expressed himself in favor of opening the dura, as he did not believe merely opening the skull was of much benefit. In two cases only the cranial cavity was opened, and blindness developed in both.

Codman<sup>29</sup> says:

In 28 of the 36 operations the attempt at a radical removal of the tumor was made, and in the eight worst cases only was it decided to do only a palliative operation. I think we may almost say it is certain that if in no case the attempt at radical removal had been made and, instead, a simple operation for the relief of pressure had been done through an intermuscular incision over a "silent" portion of the cortex, the mortality would have been greatly diminished and the percentage of improvement been made much greater. I do not mean to say by this that radical operation in the hands of a surgeon who has made a specialty of brain work is not justifiable, but that in the hands of most of us, a simple palliative operation will be far better in the long run.

In my opinion, only one who has made a specialty of brain surgery should attempt to remove a brain tumor.

J. J. Putnam<sup>30</sup> reports cases of palliative operation. In Case 2 marked relief from terrible headache and optic neuritis followed the making of a large trephine opening in the parietal region, and this, too, although the bone was replaced. This improvement was attributed to the escape of cerebrospinal fluid, which gushed in large quantities from the wound in the parietal dura. The tumor was a glioma of the lateral lobe of the cerebellum. In Case 3 a large tumor mass protruded through the trephine opening, pushing the skin before it. A measure of relief followed the operation. Recently, in association with Watermann, he has reported other cases. Lund<sup>31</sup> also has reported improvement from the palliative operation in cases of tumor of the brain.

Cushing<sup>32</sup> has reported recently cases in which the palliative operation has been of much benefit.

#### DR. W. W. KEEN'S CASES.

I add condensed notes of two unreported cases in which palliative operation was performed by Dr. W. W. Keen, with improvement in each.

28. Trans. Ophthal. Soc., United Kingdom, vol. xxv, 1904-5, p. 129.

29. Codman: Boston Med. and Surg. Jour., July 20, 1905, p. 74.

30. Putnam: Boston Med. and Surg. Jour., July 20, 1905, p. 76; also Jour. of Nerv. and Ment. Dis., May, 1906.

31. Lund: Boston Med. and Surg. Jour., July 20, 1905, p. 81.

32. "Surgery, Gynecology and Obstetrics," vol. 1, 1905, p. 297.

25. Sänger: Neurolog. Centbl., Dec. 1, 1899, p. 1118.

26. Babinski: Revue Neurolog., 1901, p. 266.

27. Sänger: Verhandl. d. Deuts. Gesell. f. Chir., 1902, p. 158.

CASE 1.—Jan. 3, 1901, E. H. M., aged 26, complained of failing vision and had later several attacks of temporary blindness. Among the first symptoms were severe headache on the right side and vomiting, later the pain shifted to the left side. He was found to have extensive optic neuritis. He has a little vision now in the left eye but is blind in the right eye. He has sharp boring pains which shoot from the upper occipital region to the back of the left ear. The patellar reflexes are exaggerated. Dr. de Schweinitz, Dec. 17, 1900, found optic neuritis passing into atrophy.

Dr. Keen, Jan. 30, 1901, made an osteoplastic flap over the left parieto-occipital region. The dura was very tense. Four small openings were made in the dura, but nothing abnormal was discovered. The brain was punctured in the attempt to reach the lateral ventricle and the attempt probably was not successful. The piece of bone was removed entirely. The patient was discharged February 18, almost entirely relieved of his headache.

At Dr. Keen's suggestion, I made inquiries regarding the present condition of this man and received the following letter, dated April 20, 1906: "I am wonderfully improved and relieved as to pain, can not see except to distinguish between night and day, have not been bedfast for a year or more, at intervals have severe pain, say every week or two, lasting from twelve to twenty-four hours, after which brain is very sore. Since last July have been having a discharge of the left nostril, of a watery-like fluid, since that the pain is not quite so severe."

CASE 2.—Feb. 5, 1903. E. B., aged 37. During the summer of 1894 a small tumor developed in the scalp on the posterior portion of the right parietal bone producing headache and a sensation of pressure. In the summer of 1895 this mass was removed. His physician stated that it was a fatty tumor. All the pain and pressure symptoms disappeared and he was perfectly well.

After several months the headache and pressure sensation gradually returned; simultaneously with the onset of the headache his eyesight began to fail, and for the last two months he has been partly blind. He has had frequent vomiting, but he attributes this to the iodids. Ataxia was noticed in the finger-to-nose test. His gait is ataxic with a tendency to fall to the right. Lateral movements of the eyeballs are ataxic. Patellar reflexes are minus. Dr. Sweet found papillitis passing into optic atrophy in both eyes.

Feb. 11, 1903, Dr. Keen exposed the cerebellum over nearly one-half of the right half of the occipital bone. The dura was extremely tense on palpation. The patient was discharged ten days after the operation entirely relieved of his headache and with the wound healed.

Dr. John T. Howell wrote to me, April 23, 1906, that the patient died in a hospital in England, July, 1904, after an operation in February of the same year. The skull was opened above the ear and a large tumor was taken from the brain. After returning from the Jefferson Hospital, in 1903, the patient's improvement was of short duration.

(To be continued.)

## PHARMACOPEIAL OR PROPRIETARY PREPARATIONS: WHICH?

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The medical profession is confronted with the difficult task of providing an effective method of checking the practice in vogue with many of its members of prescribing and recommending various proprietary remedies, many of which are most fraudulent.

It is sometimes difficult to draw hard-and-fast lines regarding what really constitutes an ethical preparation in contradistinction to a so-called "nostrum." It is not good practice to condemn *in toto*, with one stroke, all proprietary preparations, for undoubtedly ethical, non-

ethical and even many nostrums possess some therapeutic properties, since in the composition of most of them certain well-known drugs are used.

Irrespective of the composition and therapeutic value of the medicament, the medical profession brands as nostrums all which make claims to possess curative properties wholly at variance with well-known laws of drug administration. At times the physician is greatly perplexed and confused by the vast array of preparations which are offered, recommended and extolled for the treatment of various disorders and maladies, and through this uncertainty he has at times been led to prescribe proprietary preparations when in reality he has been of the opinion that he was recommending and prescribing strictly pharmaceutical remedies.

It would be an excellent plan if both practitioners of medicine and members of the pharmaceutical profession would look very carefully into the composition and combination of all new chemical, synthetic and Galenical preparations (not excluding "patented" nostrums which are from time to time offered to physicians as valuable therapeutic agents), would examine the preparations and their literature very carefully and would report the findings to the various medical or pharmaceutical societies. Then, should the preparations show any extraordinary merit, they might devise preparations of equal efficacy, if not superiority, and probably at very much less cost to the consumer.

Our standard, the United States Pharmacopeia, has already shown us the way and can always be our guide. For instance, at present there is on the market a great and ever increasing number of acetanilid combinations, differing very little in composition, but under very different and fanciful names. In order to avoid this confusion of names, and in order to harmonize the medical profession, the committee of revision of the United States Pharmacopeia has ordered incorporated into the United States Pharmacopeia the preparation known as *pulvis acetanilidi compositus*. Therapeutically it matters very little if in all these various preparations the amount of citrate of caffeine is 1/50 grain more or less, or if the amount of bicarbonate of soda is 1/2, 3/4 or 2 grains in each dose, or if the alkaline salt be bicarbonate of soda, or potassium carbonate, or carbonate of ammonia, each of which is added simply as a solvent for the acetanilid. The same rule could be used in all similar preparations which are now or may be offered.

Another example: Since the reintroduction<sup>1</sup> of earth into the materia medica as an antiphlogistic application a number of preparations with fanciful and arbitrary names—names, in most instances, suggestive of an antipyretic—have been offered to the medical profession, and here again, in order to extricate the physician from this chaos, the United States Pharmacopeia has come to the rescue and has formulated and offered to the profession a most efficient and reliable combination in "cataplasma kaolini."

It has taken many years to bring the different liquid preparations of opium, which at various times were extolled by irresponsible vendors and charlatans as boon to humanity, to assuage suffering, under a distinct class. Tinctura opii, tinctura opii camphorata and tinctura opii deodorata of indefinite strength were for years sold

1. The use of earth or clay as a topical application is as old as medicine itself. Applications of earth or clay or of earth mixed with oil or fat were the only remedies used on painful surfaces by the poor in ancient times. Then followed the use of earth and molasses, hot or warm sand or salt, then bread and milk poultices, linseed meal, and now it is popular to use earth and glycerin.