may have a purulent conjunctivitis and if the pus is drained through the nose there may be no dacryocystitis, but let there be some occlusion and inflammation at once takes place, and so here the pus is retained if there is occlusion, and then we get the typical symptoms of mastoiditis. In regard to the occurrence of mastoiditis in the negro, Dr. Calhoun's cases must be very mild, for I have seen many cases in the negro and I do not think there is any differentiation to be made as to the negro race. There is no doubt that not every case of mastoiditis needs operation, but how we can determine how many need it and how many do not is very difficult to answer. While the discharge keeps on from the tympanic cavity considerable regard must be paid to the temperature. I can not conceive of an adult having a temperature from an ordinary otitis media, especially after some two weeks. I had a case which taught me the lesson of not confiding too much in the patient. I had a man with an otorrhea, an acute otitis media, and I opened the drum and the discharge gradually slackened up. I used alcohol and the next day he developed a sclerosis wherever the alcohol had touched. He told me this happened wherever alcohol was used on the skin. The stenosis gradually diminished. When the drum was seen it was found to be healed and the man gradually got better by the introduction of gauze. Two or three weeks afterward he came back complaining of neuralgia, which reached forward to the eye. I told him to consult his family doctor to see if he could find any cause. The patient had a course of phenacetin and other analgesics, and then came back to me. I put him in the hospital and watched him for a few days, and the temperature went up to 102 F. I then operated and found the mastoid not involved. On exposing the sinus I found it covered with granulations and the sinus wall was thickened.

DR. S. F. SNOW, Syracuse, N. Y.—There have been a few points brought up that I would like to emphasize, particularly the hot water method that Dr. Chambers has mentioned. I know that hot water injected as he describes does good. It will control a good many cases where we even have pus in the mastoid. I, personally, am using ice, for the simple reason that cold constantly applied without any chance for the temperature of the part to rise again after it is put on, controls the inflammation the same as hot water does, and it also prevents the multiplication of pus elements. I have been conducting a series of observations that show quite conclusively that if we use ice in this way we will avoid operation in fully 25 per cent. more cases than under the usual lax method. There is no limit to the time ice may be constantly applied, so long as it continues to do good. We are justified in keeping it on beyond "thirty-six or forty-eight hours" if the symptoms continue to improve. At least let us use it during the interval that usually exists between our diagnosis and the actual time of operation.

DR. L. J. LAUTENBACH, Philadelphia—There are all variations in cases and treatment. I wish to mention a case operated on by Dr. Fulton. There was some caries of the middle ear discernible. The case followed scarlet fever in childhood. There had never been any pain; there was a constant discharge and no hearing. The patient was operated on a year and a half ago, and within twenty-four hours he left the hospital and never afterward had a symptom. He was in my office about a week ago, and he could hear the watch at ten or twelve inches and could hear the voice very readily. It does not seem reasonable that all cases should be examined by the same standard. For instance, that individual would have sacrificed at least much of his hearing. If our treatment is conservative we should make it so, and if it is radical it should be radical. But every case must be studied carefully and then only can we decide the proper treatment to institute. If I find one thing fails I then go a step further. We may, in our papers and discussions, be dogmatic, but in our treatment we all do the best we can in each individual case.

DR. H. KNAPP, New York City—One of the gentlemen asked me to say a word about the ophthalmoscopic condition in sinus thrombosis. In many cases I have noticed that they can be diagnosed very readily. First to appear is retinal congestion: the veins are enlarged and tortuous, first on the side of the affected ear, then in both eyes. Then the retinal congestion develops into the picture of neuroretinitis; optic discs and adjacent retina are diffusely swollen and opaque, not the picture of abrupt jockey-cap elevation of the choked disc from cerebral tumor. Then when the sinus thrombosis is recovered from, spontaneously or by operation, the ophthalmoscopic signs disappear *pari passu* with the progress of the recovery, to end in perfect restoration of sight. The interrupted course of the pyemia, in the affections of joints particularly, is accompanied by corresponding aggravation and improvement in the ophthalmoscopic condition.

APHASIA WITH LETTER-BLINDNESS, WITHOUT WORD-BLINDNESS; WITH RIGHT HEMIPLEGIA AND PULMONARY TUBERCULOSIS.*

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PHILADELPHIA.

I wish to make a brief record of a case of pulmonary tuberculosis with intercurrent hemiplegia of the right side and motor and sensory aphasia, with letter-blindness, but not word-blindness. The patient is a physician and a member of the faculty of a well-known institution. He is now 35 years of age; he had pneumonia sixteen years ago, and had a slight attack again two years ago. His tubercular infection is probably now of about four years' duration. At the beginning of the year 1899 both lungs were infiltrated; the right, generally consolidated. The fingers were clubbed.

January, 2, 1899, he had a sudden paralysis involving the right face, arm and leg. It was apparently simultaneous throughout this distribution, and did not extend from one area to another. There was a short period of unconsciousness. I saw him the next day at the request of Dr. D. D. Stewart, of Philadelphia. During the first twenty-four hours he could speak only the word, "no." In the next twenty-four hours he could speak four words and could move his right arm and had good control of his facial muscles; these muscles, however, were not so well innervated on the following day, but quickly regained their normal power. Sensation was good all over the body. The tongue was protruded to the right and the affected arm and leg were moved freely. The knee-jerks were normal on both sides; the plantar reflex was also normal. On the ninth day he walked to the sitting-room and insisted on helping himself to tobacco and a glass of wine, and from that on he steadily gained power. I examined the visual fields for form, but was not able to distinguish any departure from normal. January 13 the patient was able to write his name for the first time, and his vocabulary was steadily increasing.

When shown a silver pencil he could not name it: when he was asked if it was a knife he said, "no"; a piece of wood, "no"; a pencil, "no" (word-deafness). When he was asked if it was something to write with, he answered "yes." Upon being asked if a key were several things, including "key," he said "no." Having been asked if it was something to open the door with, he said "yes, yes."

On January 20, the patient was shown a silver dollar; he could not say what it was. "Is it a watch?" "No." "Is it a wheel?" "No." "Is it a piece of iron?" "No." "Is it a dollar?" "Yes, it is a dollar." The patient was given a few coins; he added them in a correctly built column with the total value correct. He mispronounces some words and substitutes words incorrectly in a sentence. For example, he said: "the quiet was," instead of the reason was; "spade," for paper; "glass of ice water," for a pair of scissors; "was late," for he was weak; "blockade," for dump; "bathree," for paper; "put those groups away for me," for put those grapes away for me—paraphasia.

He read the daily paper regularly and read McMaster's history of the United States and enjoyed it. He

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had letter-blindness, but not word-blindness. When shown the alphabet he counted "1, 2, 3," instead of a, b, c. When shown "o," he could not call it; neither could he call "i," "l" or "d"; but shown the words boy and child, he instantly pronounced them. He said "boat," for cars; "pipe," for glasses; "spoon," for comb and so on.

The tubercular process was marked by dulness extending posteriorly as far as the angles of both scapulæ and by soft mucous râles in both apices. Tubercle bacilli were present. There was no fever at any time, and the pulse ranged from 76 to 88. There was no hemoptysis. His treatment included potassium iodid, 5 to 10 grains, t. i. d., and the subcutaneous injection of antitubercle serum in the upper arm at intervals of from two to four days, until the latter part of March, 1899, when he went, on our advice, to the orange district of southern California. Now, after nearly a year and a half, he enjoys a fair amount of health, his tubercular process is not checked, his aphasia and agraphia are still present, though in less pronounced degree.¹

Without going further into this case, it is interesting to note the occurrence of hemiplegia in the course of tuberculosis. Whether in this case it was due to a hemorrhage, a thrombus or an embolus we can not positively say; it was probably the latter. The letter-blindness is a most interesting and unusual feature. We may have word-blindness without letter-blindness. Letter-blindness is not always looked for, and that is partly the reason why so few cases have been recorded. Dr. Hinshelwood,² of Glasgow, has recently published a clear exposition of the subject, with records of interesting cases, and he shows that if by disease, the visual word-center is completely destroyed, or if it is completely cut off from the primary perceptive centers in the occipital lobes then the patient is both word-blind and letter-blind. But if the destruction is only partial, and that part of the center in which are stored the visual memories of letters remains intact, then the patient, though still able to recognize the individual letters by sight, will no longer be able to recognize and interpret words, because he has lost the visual memories for words, which he had acquired by years of laborious effort.

Clinical evidence goes to prove that all these memories for words, letters and figures are functionally independent and have a distinct and separate anatomical seat. It would appear that the positions of these three centers are adjacent, and while the boundaries have not been defined with precision, pathological experience tends to prove that the centers in which are stored the visual memories of letters and words includes the supra-marginal and angular convolutions, both of which belong to the inferior part of the parietal lobe.

In most people this center is supplied by the left Sylvian artery, and in the case which we have reported, it is quite likely that, being a right-handed man, an embolus or hemorrhage of this artery caused the hemiplegia and the consequent aphasia. In cases in which either word-blindness or letter-blindness, or both, exist without hemiplegia we may explain the lesion as situated in a branch supplying the visual word or letter center, while the branches going to Broca's convolution and the motor areas for the face, arm and leg remain undisturbed. In our case the hemiplegia was com-

paratively transient, function was restored in a few days, but the aphasia persists at the end of nearly a year and a half, much to the annoyance of the man whose living depends on the free exercise of his highest intellectual faculties.

DISCUSSION.

DR. F. SAVARY PEARCE, Philadelphia—In regard to the recovery from hemiplegia, and in regard to tuberculosis of the brain, I simply wish to record my feeling that hemiplegia or paralysis from the tubercular processes, which apparently this case was, are more apt to recover, at least transiently, than paralyzes from other causes, such as hemorrhage or even from specific disease. I remember full well the instance of a young child who had a tubercular meningitis with sequent hemiplegia. A shifting of the paralysis from one side to the other, involving the leg and the right side of the body, then one extremity after another in order of pressure made or relieved by the exudate or its absorption. The case came to autopsy, and we found tubercular exudative processes then to be mostly about the base of the brain. The palsy had shifted in this case, due to exudation and absorption with shifting pressure results.

DR. JAMES H. MCBRIDE, Los Angeles, Cal.—There are occasionally peculiar transformations of aphasia in syphilitic brain lesions. One patient I had was attacked a number of times with motor aphasia, from which he recovered; then at other times with auditory aphasia; and at others with visual aphasia. The form was distinct in each instance, and he again and again relapsed and recovered, sometimes having one form and at other times other forms.

About 1874 there was reported, in the *British Medical Journal*, the case of a right-handed child who, at 10 years of age, had a lesion in the left third frontal with motor aphasia with subsequent recovery of speech. Two years later a similar lesion on the right side produced permanent aphasia. An autopsy showed two lesions, the first in the left hemisphere, the second in the right.

DR. W. G. SPILLER, Philadelphia—When he observe a case of aphasia with localizing symptoms, we naturally incline to the belief that there is a focal cerebral lesion, but such cases may occur in which a lesion can not be seen either by the naked eye or the microscope. I recall a case in which no signs of nephritis had been found, and the symptoms of aphasia were sufficiently localizing to justify an operation. The day before the one set for the operation, evidences of nephritis were found, the operation was postponed, and after the nephritis had been treated, the aphasic symptoms disappeared. I have recently seen a case of Dr. Lloyd's, with localizing aphasic symptoms without any lesion whatever in the brain. This patient also had nephritis. Cases of hemiplegia and aphasia have been reported in which carcinoma has been found in various parts of the body. In one or two of these, lesions have been detected in the meninges; but in others no lesions which would explain the symptoms have been found. I am not aware that any one has reported cases of tuberculosis of various organs of the body causing aphasia, but if aphasia can occur as a result of some poison produced by carcinoma, it might possibly be produced by tuberculosis.

DR. GUY HINSDALE—I did not look upon this case as being one in which tubercular deposits occurred in the progress of the disease about the centers which govern speech and writing. It seemed to me more likely inasmuch as there was an exceedingly rapid onset in which the paralysis extended immediately over one-half of the body with the rapidity of a thunderbolt, there was probably an embolus, or something that was carried to the brain through the circulation from some point of softening in connection with the pulmonary tuberculosis. Of course, we have thrombi of the extremities in cases of pulmonary tuberculosis, giving rise to the most painful symptoms; why not also a thrombus or embolus in the brain?

Recent public health legislation in New Zealand consolidates and amends the law previously in effect there. It provides for a minister of public health, to be appointed from the Executive Council, by the governor, and bestows exceptional powers on district health officers.

1. The patient died in California, of phthisis, in the summer of 1900.

2. James Hinshelwood: Letter-, Word-, and Mind-Blindness, London, 1900.