It seems probable that the fibres connecting the visual with the auditory centre were interrupted, for he found difficulty in reading aloud, and though he could recognize an object he could not recall its name. The fibres passing in the opposite direction were doubtless also interrupted, for he could not write difficult words from dictation. That the fibres passing from the auditory area to Broca's convolution were probably impaired is shown by the fact that though he could hear and, to a certain extent, interpret from hearing, he could not talk correctly (paraphasia).

To what extent these different structures were invaded it is impossible to determine. Probably the visual word centre was spared and his inability to recognize certain words when he saw them was due to the inability to reproduce the sound of the word through its sight, that is, interruption of the fibres connecting the visual with the auditory word centres. We have no reason to suppose that Broca's convolution was invaded. His speech showed not the least sign of impairment except for words whose meaning he evidently did not grasp; in other words, there was no evidence of loss of the kinesthetic speech memories, but rather lack of proper stimulus to those centres from the auditory word centre.

This case tends to corroborate the views originally held by Broca and Trousdale and later sustained by Wernicke, Dejerine, Collins and many others, that there is no writing centre in the sense of a centre in which are stored up the kinesthetic memories of written words, and capable of stimulation independent of Broca's convolution. The inability to write in this case was absolutely coincident with his inability to talk. The words he could utter he could place upon paper; those which he could not, he utterly failed to write. When the auditory centre either failed to recall the memory of the sound of the word, or if remembered, to convey the stimulus properly to the kinesthetic speech centre, it failed also to communicate it to the centre for the movements of the hand. It is true that at the first trial he wrote the names of the months better than he said them, in order to do this, however, he took time, and repeatedly scanned his list. The fact that half an hour later he was able also to say them, showed that there was really little to choose between the two defects. To one sustaining the views of Bastian, that the centre for hand movements is capable of being stimulated from the visual and auditory centres independently of Broca's convolution, it might be claimed that this case merely showed that the fibres to both the hand centre and to Broca's convolution were equally impaired. In view of the prevalence of similar cases, and in the dearth of definite cases of agraphia without aphasia¹⁰ the prevailing opinion seems opposed to Bastian's theory.

¹⁰ In a recent article on "Cerebral Anesthesia" contributed to *Brain* by the writer in conjunction with Dr. Paul, a case (seen in consultation with Dr. Phippen of Salem) was reported, which might be cited as an illustration of agraphia without aphasia. This patient (who suffered from a local cortical lesion accompanied by attacks of Jacksonian epilepsy always commencing in the hand) had no defect of speech, but could only write by tracing the let-

That the centres and fibres affected were not destroyed is shown by the complete recovery. The patient presented himself for examination at the neurological clinic of the Massachusetts General Hospital two months after the examination here detailed, and no defect of speech could be elicited by the most searching examination. He brought specimens of his newspaper work which showed no error, and stated that the only trouble he had recently noticed was that on one occasion he found difficulty in spelling the word *jewel*, and on another in recalling the word *yet*. This word is one of a class less readily acquired, and perhaps less readily retained, than nouns and verbs representing tangible objects and actions. It seems probable that if aphasics were systematically examined with reference to their ability to use words of this nature, defects, at least equally serious with those in the use of substantives, would be brought to light, though the simpler conjunctions and prepositions may be more firmly fixed than nouns. This is mentioned in view of the special designation (anomia) which has been used to denote inability to name objects, and which has been accorded by no less an authority than Mills, a special centre in the temporal lobe.

CONGENITAL ELEVATION OF THE SHOULDER.

A REPORT OF TWO CASES ILLUSTRATING THE TWO TYPES OF THE DEFORMITY, TREATED BY OPERATION.

BY JOEL E. GOLDTHWAIT, M.D., AND CHARLES F. PAINTER, M.D., BOSTON.

The following cases are reported as illustrating the two types of the condition described as "Congenital elevation of the shoulder."

In one the position was probably due entirely to the imperfect development of the muscular structures, and is analogous in every way to congenital torticollis in which the sterno-cleido-mastoid muscle is imperfectly developed. It is possible and not improbable that in this condition an injury at the time of birth may be the cause of the trouble, as has been clearly demonstrated in the case of torticollis.

In the other case the position of the shoulder is associated with an embryological condition, there being a distinct articulation between the upper angle of the scapula and the vertebra.

Both cases have been operated upon with improvement in the appearance of the patient, and with practically normal results in regard to function.

ters slowly as if learning them anew, though she had perfect control of the movements of the fingers. She had, however, equal difficulty in sewing, or performing any movements requiring the appreciation of the feeling of objects in the hand, nor could she name such objects with the eyes closed (astereognosis). The inability to write did not demonstrate, then, lesion of a special centre for writing, but was only a single sign of the loss of the kinesthetic hand memories (active touch) resulting from lesion of the physiological group of fibres and cells presiding over the stereognostic sense. The probable seat of the stereognostic sense for the hand is not far distant from that assigned by Bastian to the centre for writing memories, and it requires no great stretch of imagination, as was pointed out in the article mentioned, to assume that the one includes the other.

E. H., a boy 12 years of age, was brought to the Children's Hospital Oct. 6, 1900, because of the position of the left shoulder. The peculiarity was noticed first when the child was a year old. There had been no known injury or other cause for this condition. As the child has grown, the condition has become more marked.

At the time of the first examination the arm could be used freely, and except for the fact that the whole shoulder was elevated, as is shown in the photograph (Fig. 1), there was no disability.

On Nov. 7 the child was operated upon. An incision 6 inches long was made, extending from the middle of the top of the scapula to the angle below, and carried down to the attachment of the trapezius muscle. The attachment of this muscle

of being flat, as it is normally. There had been so much improvement, however, that it did not seem wise to attempt to correct this feature. Accordingly, the tendon of the trapezius muscles was reattached a little higher up on the spine of the scapula than normal, in order to draw the shoulder down, and the wound closed. For dressing, the arm was put up so that the outer part of the shoulder was elevated as much as possible, in order to throw the angle of the scapula far out at the side. With this a strap was carried tightly across the inner portion of the shoulder, so that this portion of the scapula was drawn down as far as possible, and entirely reversing the angle of the bone, as it was before the operation.

FIG. 1.

to the spine of the scapula was divided, and the lower half of the muscle folded back so that the rhomboid muscles on the inner edge of the scapula could be exposed. Both of these muscles contained little muscular fibre, and were represented largely by fibrous tissue. Both muscles were divided, as were also the levator anguli scapulæ. After this it was possible to draw the scapula to the side, but it could not be depressed sufficiently, owing to the lower portion of the serratus magnus which was shortened. This was divided, and the scapula brought down as far as possible. A perfect position could not be obtained, owing to the fact that the portion of the scapula above the spine was bent forward instead

FIG. 2.

The recovery was uneventful. Passive motion was begun at the end of two weeks, active motion a little later, with a gradual increase of both, the chief aim being to develop the muscles which would tend to hold the shoulder in the best position.

The result is shown in the photograph (Fig. 2). Functionally the arm can be used normally.

E. C., aged 11 years, had always been a healthy, active boy. Since early childhood parents have noticed that he was "stoop-shouldered," and that this has increased as he has grown older, and the head has been bending over more and more, as is shown in the photograph (Fig. 3). His

brothers and sisters are well, and there are no congenital deformities among them. The use of the arm has not been restricted, except in the extreme of elevation of the extended arm from the sides—no limitation which would interfere with the usual and habitual exercises of the arm. There is marked facial asymmetry, as in the congenital torticollis. In the past year or two the cervical deformity has increased so rapidly that he was brought on that account.

Examination shows a fairly developed boy. Right arm one-half an inch smaller than left; fore-

vical spine, convexity to the left with prominence of the spine of the seventh cervical vertebra. The axillary and vertebral borders of the scapula are not bound down. The upper angle of the right scapula is attached to the vertebral column by an osseous band which allows of motion upon this as a pivot.

On Sept. 2, 1901, an incision was made over the point of attachment of this osseous band to the scapula. On dissecting it clear it was found to be about one and one-quarter inches in length and three-quarters of an inch in width and one-quarter of an inch in thickness. The vertebral end was

FIG. 3.

arms equal and of about equal strength, as tested by the grip. The right scapula is small as could be seen in the x-ray. The lower angle of the right scapula was at about the level of the middle of the vertebral border of the left. There is slight atrophy of the supra- and infra-spinati on the right. On raising the arm laterally motion was possible scarcely beyond a right angle, and the lower angle of the scapula projects sharply; even with the arm at rest it is more than normally prominent. There is a sharp curvature of the cer-

FIG. 4.

attached to the seventh cervical vertebra coming from its transverse process. It was this which, as it grew, apparently had pushed the cervical vertebra over to the left. There was an articulation at the scapula end, and also at the vertebral end. Both were removed. Its removal permitted the scapula to be moved freely and normally as well as could be judged under ether.

The wound healed by first intention, and under massage and exercises, with suspension by the head sling to correct the position of the cervical spine, there has been distinct improvement,

which is partially indicated in the photograph (Fig. 4).

No attempt has been made to present the literature on the subject, as it has been quite recently and fully reported by Rager,¹ but a case illustrating each type of the condition treated by operation seemed of enough interest for special report.

TUBAL PREGNANCY WITH DOUBLE PYOSALPINX.*

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INQUIRIES made of several surgeons with large opportunities to see and hear of the various varieties and conditions of extra-uterine pregnancy have failed to find any case just like the one now reported; nor, by a moderate, though not exhaustive, search of the literature upon ectopic gestation, has the writer been able to find a like case.

Miss —, 2,232, was sent into St. Elizabeth's Hospital because of prolonged flowing, and for the correction of a backward displacement. She was 26 years old, single, never pregnant; menstrual life had been of the normal type. Flowing began Jan. 18, being a few days late, and continued to the amount of 1 or 2 napkins almost daily until operation on March 1. For this she had been packed several times, with temporary relief. There was marked pallor and a systolic murmur, probably hemic. There had been no severe or alarming symptoms, but simply those of the ordinary pelvic inflammation. The urine showed an acute cystitis. From the clinical story she undoubtedly had gonorrhea, though unfortunately no microscopic examination was made.

Under ether the uterine canal was $3\frac{3}{4}$ inches deep. Dilating and curetting caused free bleeding, but only a very slight amount of curettings were obtained.

Up to this time the writer supposed that he was most likely dealing with a double salpingitis resulting from a neglected abortion, and the first suspicion of an extra-uterine pregnancy arose when the peritoneum was reached in doing the celiotomy, and dark fluid was observed bulging up the peritoneum. By guess there was a good pint of bright blood in the abdominal cavity. There was extreme retroflexion, with the fundus tubes and ovaries firmly adherent to everything they touched. Each ovary was the size of a large English walnut, with small cysts containing bloody fluid. The left Fallopian tube was the size of a forefinger, and pus leaked from its fimbriated end on freeing it from the surface to which it had adhered. The outer two-thirds of the right tube was thumb size and was bleeding freely from the fimbriated end.

¹ Zeitschr. f. Arthropäd. Chir. Bdix, H. I.

*Read before the Obstetrical Society of Boston, Oct. 15, 1901.

In view of her age both ovaries were resected, leaving a rather poor looking portion of ovary on either side, about one-third the size of a normal ovary. The left tube was entirely removed. The right tube was resected, leaving an inch of the uterine end, to which was attached the remaining portion of the right ovary. The appendix, being mixed up in the adhesions, was freed and removed. The retroflexion was corrected by suspension to the peritoneum, and the belly closed by the usual layer method.

The pathological examination was made by Dr. R. M. Pearce, who reported: The uterine scrapings negative; pus in each tube; and a tubal pregnancy in the fimbriated end of the right tube, which must have preceded the infection and pus formation in this right tube—the pus pocket being on the uterine side of the pregnancy.

After operation the pulse remained high but of fair quality. The temperature was not above 102° until the eighth day, when a pulmonary embolus occurred. Up to this time she had been a very sick woman, but was gaining, taking plenty of nourishment, and was thought to be on the road to recovery. With the embolus the pulse went to 150, the temperature to 105.8°, and the respirations to 50 or 60, where they remained with the right chest the chief source of discomfort until another embolus, followed by death within 5 minutes on the eleventh day after operation.

Autopsy was not allowed, but the house officer opened the celiotomy wound within an hour after death. Pus was present in the abdominal incision. There was a pint, by estimate, of fluid in the abdominal cavity, and general intestinal adhesions. A small piece of the right lung was obtained, upon which Dr. Pearce reported an acute fibrinous pleuritis, with streptococci in the pleura and lung tissue. Smears from the celiotomy wound and from the abdominal cavity were unfortunately placed upon culture media so old that nothing grew.

In my search for similar cases many most unique cases were found, a few of which the writer will briefly recall to you.

Warthin¹ reported a case of extra-uterine pregnancy with tuberculosis of the placenta and fetus in a patient aged 38; married 13 years, without any pregnancy. From the history, rupture occurred in October and was followed by peritonitis. Both ovaries were cystic at the operation the following April. The right tube was tortuous and large. The left tube thickened and ending in a cocoanut-size mass containing a male fetus 7 inches in length.

Jordan² reported a case of right pyosalpinx, ending in a general abscess, which was opened above the right Poupert's ligament. A vesicovaginal fistula followed childbirth 2 years later, which was cured after 5 operations, 1 being suprapubic. Menstruation continued regular until about 4 years later, when she sought advice, having been 51 days without menstruating and the last one very scanty. Examination was not sat-