to the level of the mouth, but only flexed the elbow slightly, and there was still considerable pronation of the humerus and marked pronation of the forearm. In November she could flex more at the elbow, but supinated very little. By March, 1908, she could supinate about twenty degrees beyond the mid point, put the hand behind the head, and elevate fully. In September of that year she could elevate the arm to the perpendicular, put the hand behind the head, and the hand to the mouth without elevating the elbow, and supination, while the most affected movement, was two-thirds normal. In January, 1909, I have noted that supination seems to be to the full extent if the humerus is held in external rotation, and the whole trouble seems to consist in a partial loss of this external rotation. In December, 1912, when the arm was hanging by the side there was a little internal rotation of the humerus, but actively it could be rotated outward as well as the unaffected one, and all movements were normal, though at times the elbow was elevated. The left arm was half a centimeter shorter than the right, and the forearm six-tenths smaller while the circumference of the upper arms was the same.

CASE 2. Ellen P. was first seen on July 21, 1909, at the age of two weeks. The delivery had been by the breech, with no especial difficulty in the delivery of either the head or body. Immediately after birth it was noted that neither arm was moved, and that the right one was pronated but the left was not. When first seen the child had begun to move the left arm freely, but not the right one. This arm was held at the side and could not be abducted nor flexed, and was strongly pronated, while the movements of the wrist and fingers were freely made. By November the arm could be abducted to the level of the shoulder, flexion of the forearm was good, and there was some power of supination. In April, 1910, flexion of the forearm was normal, she could raise the hand to the level of the top of the head, supination was fair, and there was some external rotation possible of the humerus, though the pectoral was more tense than normal. In July, 1910, she could elevate the arm fully, and supinate the forearm completely, and the only distinct sign of the paralysis was a moderate internal rotation of the humerus, and that the child occasionally raised the elbow in putting the hand up. At the present time there is no difference in the length or circumference of the two arms, and all movements are normal.

CASE 3. Mary L. was seen first on October 11, 1905, at the age of eight weeks. There had been great difficulty in the delivery of the shoulders, and since birth the left arm had been motionless at the side except for some movements of the fingers. It could not be flexed at the elbow, was strongly rotated inward, and pronated, and there was no power of abduction. This case is mentioned because it was treated by the exercises alone, with no massage, and by April, 1909, she could make all movements well with the affected arm, and could supinate quite well, but there was considerable hanging behind in growth of the arm, though I have unfortunately been unable to find the measurements, but the difference was much more than in the cases which also received massage during the treatment, thus showing the importance of this in preventing the lagging behind in growth.

X.

ROUND SHOULDERS WITH SHORT CLAVICLES.

BY AUGUSTUS THORNDIKE, M.D.

The following is published because of peculiar features:—

Annie M., aged nine years, first came to the Children's Hospital in January, 1912. Her mother had noticed stooping shoulders since the age of four years, a condition which steadily grew worse. She had always been thin and puny. There was no lateral curvature, but the shoulders were very sloping and drooped far forward, producing a hollow chested appearance. The tips of the shoulders seemed very close to the nipples, and by measurement were less than two inches from them, while the scapulae projected like angel wings.

She began treatment at the hospital with two months of exercises. She had previously had them at home under direction of her physician without benefit. Entirely at the parents' request she entered the hospital wards to see if an operation could be done. The position of her shoulders and her general attitude is shown in the photographs. The muscles of the upper back were very little developed, while the great pectoral muscles were so stout and short that they effectually prevented throwing the shoulders back. The collar bone seemed short and the upper part of the body of the shoulderblade could be felt curving forward at a right angle to the plane of the lower portion.

Were the clavicles really short or did they seem so? I was unable to find any data relating to variations in the size of clavicles during the period of growth. We know that the size and shape are affected by rickets, osteomalacia, and that shortening occurs from fractures; in rare instances the bone or a large part of it may be absent at birth. No other assistance was obtained from the literature.

Certain definite proportions exist between the total height of the human body and that of parts, like the head, trunk, arms, legs. Painters and sculptors make use of these proportions. Why not extend this rule to other bones in the body? Why not apply it as a test to children's clavicles, and find out what relative proportion exists between the length of the clavicle and the height of the child? I accordingly measured these on three different occasions in the hospital wards. Twenty children were measured at one time, thirteen at another and six at another time, a total of thirty-nine children between the ages of two and twelve years. The ratio between the length of the clavicle and the height of the child averaged 9.97%. That is to say, the average of thirty-nine children showed the length of the clavicle to be 10% of the child's height. Individual measurements varied, the shortest was 8.8%, the longest 11.2%.

Annie M.'s clavicles measured $4\frac{1}{8}$ inches, her height 52 inches, the ratio 7.9%. In other

words, her collar bones were relatively 1% shorter than the shortest, and in order to attain average proportions, each bone should be an inch longer.

Annie M. Round sloping shoulders, short collar bones.

This was explained to the parents, and at their request on March 18th, under ether, the clavicles were divided by an oblique osteotomy, and the great pectoral muscles cut near the insertion. Less than a half inch could be gained before cutting the pectorals. Much more than an inch afterwards. The blade of the osteotome was a quarter of an inch wide; it was made to enter the clavicle just outside the centre, and was directed toward the outer posterior corner of the bone. As the outer half of the clavicle is very thin, vertically, but in an antero-posterior direction widens greatly at the outward end, the cut surfaces of the bone were still in contact over a large area even when the outer fragment had uncovered an inch of the inner fragment. There was little tendency to displacement. Catgut sutures were used, one over the clavicle, two over the pectoral incisions on each side; small sterilized gauze dressings were applied with adhesive plaster strips, and a short light plaster of Paris jacket applied, carefully modelled over the shoulders, the upper chest and the back. She was allowed free use of the arms below the elbow; in two days she could sit up and feed herself; and in three days she was partially dressed, walking about the ward. The discomfort was very little, the wounds healed by first intention; when the plaster was removed in three weeks the right clavicle measured $5\frac{1}{8}$ inches, the left $5\frac{1}{4}$ inches, a gain of $\frac{7}{8}$ and of one inch respectively.

Three months after operation the gain was slight, but she was broader across the shoulders, and her parents were pleased. The back muscles were still very thin and weak; she was exercising them and slowly developing them.

Since then another year has passed. Her attitude is really much improved; she can assume a fairly normal position and the chest expansion is much greater, but it may still be necessary to straighten the scapulae by an operation. The writer hoped that if she could hold her shoulders in a fairly normal position for a year, the body of the scapula would straighten itself.

This is the only instance I have recognized of short clavicles. Was the condition due to an early arrest of growth in the bone during fetal life, or did it result from the unusual forces acting upon the clavicle from the over-powerful pectoral muscles opposed by very weak trapezii and rhomboid muscles and serratus.

Oblique osteotomy for lengthening a clavicle had been already performed by Dr. F. E. Peckham of Providence for a patient with considerable shortening from a healed fracture and scoliosis. This I did not know at the time I operated.

XI.

REMOVAL OF FOREIGN BODIES FROM THE OESOPHAGUS AND LOWER AIR PASSAGES IN CHILDREN.

BY D. CROSBY GREENE, M.D.,

AND

F. E. GARLAND, M.D.

DURING the past five years of our service at the Children's Hospital, we have removed foreign bodies obstructing the oesophagus or lower air passages in twenty cases, by means of endoscopy. Ten of these foreign bodies were located in the oesophagus, three in the larynx, three in the trachea, and four in the bronchi.¹ Prompt recovery followed in all but two of the cases. In one of these, a piece of fig in the left primary bronchus was not completely removed, and later caused a pulmonary abscess which resulted fatally several weeks after bronchoscopy. The other case was brought into the hospital in a state of prostration, having been mistakenly treated for a week for diphtheria, by successive intubations and several doses of antitoxin. The child was almost moribund at the time, and removal of a peanut from the left bronchus was followed by death in a few hours.

For obvious reasons the majority of foreign bodies lodged in the oesophagus or lower air passages are found in young children.

The problem of their removal in children as contrasted with that in adults presents two main differences: the first has to do with the anesthesia,² and the second with the smaller calibre of the passages. Whereas in adults with a moderate degree of self control local