

Its first concern is to acquaint the student with the content of common foods. In his physiologic studies he has become familiar with foods in metabolic classes, as proteids, carbohydrates, fats and salts. Of the proportions, relations and character of these foodstuffs in meats, breads, vegetables, etc., the student and the practitioner of medicine usually know nothing. It is the business, therefore, of this course to teach him the composition of the common articles of dietary, the dominant or most valuable food qualities of each and the means by which these qualities may be best conserved or elaborated.

With this content learned, he is taught to compare and select the several forms of food, with some reference to their economic value, in order that he may suit his selection to the circumstances of those with whom he has to deal. He learns, too, to estimate foods by their several standards of valuation, with reference to their digestive, nutritive, metabolic and esthetic qualities, inquiring how these qualities compare, conflict or may be made to harmonize with each other. He is taught that harmony between these several values is essential to the highest selection of foods.

At the same time, he undertakes the study of the principles and practice of food preparation. He does not learn merely the art of cooking, or even of hygienic cooking, in the ordinary sense of the word. The laboratory of dietetics is not simply a cooking school. He learns not to build menus, but to assist in building tissues. He is constantly reminded of the uses to which food materials are to be put, of the processes to which they are to be subjected within, as well as without, the body. Food preparation, or the actual cooking of foods, is in fact minimized, in sympathy with the best physiologic teaching. No method of cooking is taught which does not or should not improve the digestive, conserve the nutritive and enhance the metabolic qualities of the food.

In relation to food preparation, he studies the office and limitations of heat as a means of cooking, the best methods of obtaining and utilizing heat for cooking purposes, the most desirable forms of cooking apparatus and utensils, and the several processes by which food may be profitably prepared. Incidentally, he learns the adaptations of different foods to conditions of disease, the modifications of food which the sickroom may demand and the forms of food suited to successive periods of life.

#### COURSE OF STUDY.

Two lessons are devoted to milk. They require a study of the content and percentage composition of human and different animal milks; they discuss methods for the modification of milk for infant uses; they teach the process of its predigestion, and the use of measures for the improvement of its digestibility and for the variation, in many ways, of its flavor. Similarly, eggs, cereals, bread, modifications of bread, meats, fish, soups, vegetables, fruits, plain puddings, cold desserts, beverages and infant foods, are severally studied.

Brief talks are given in connection with the practical lessons, in which the various methods of cooking, the different means of employing them, the selection of foods in market, the serving of foods especially for the sick, the choice of food in diseased conditions, etc., are discussed. The students work in pairs, and each pair is provided with a complete outfit of the most improved cooking utensils and has access to gas stoves and Aladdin ovens for the preparation of foods. Each tests and submits the product of the work to the approval of the staff.

A lady instructor in dietetics, who has been practically trained in the best schools of domestic economy, as well as in the University itself, and also the demonstrator of physiologic chemistry, assist the chair of physiology in the conduct of this course. At the close of the sixteen weeks of study the members of the class are competent to select, prepare and serve, physiologically and, at the same time, artistically any desirable form of food. They can intelligently criticise or direct the cooking of a meal or of any special diet.

It is with the hope that this practical addition to the medical curriculum will commend itself to the intelligence of the profession and, particularly, to the educator in medicine, that this brief notice is called to this initial and still novel attempt in the teaching of practical dietetics.

### THREE CASES OF PARALYSIS OF THE SERRATUS MAGNUS AND THE TRAPEZIUS— ALAR SCAPULA.\*

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The scapula affords attachment for many large and powerful muscles that play an important part in the varied movements, not alone of the shoulder but also of the entire upper extremity. Thus, the trapezius aids in elevating the scapula and approximating it to the spine; also in rotating the scapula, causing the acromion to ascend and the lower angle to move outward. The action of the trapezius is supplemented by that of the elevator muscle of the angle of the scapula and of the rhomboids, the latter of which rotate the scapula on its outer angle and cause the lower angle to move inward. The serratus magnus moves the scapula outward, forward and slightly upward. It tends to rotate the scapula on its inner angle and thus to elevate the acromion, but in this it is opposed by the elevator muscle of the angle of the scapula and the rhomboids. It also helps to keep the scapula applied to the chest. The deltoid abducts the humerus to the horizontal and also moves the arm both forward and backward. The supraspinatus aids the deltoid in abducting the arm, moving it forward and rotating it inward. The infraspinatus and teres minor rotate the humerus outward, while the subscapular rotates the humerus inward. The latissimus dorsi lowers the arm when it is raised, displaces it backward, adducts the scapula, depresses the shoulder, inclines the trunk and, acting with its fellow, extends the trunk. The pectoralis major brings the shoulder forward and upward or downward in accordance with the position of the arm. The teres major approximates the humerus and the outer border of the scapula, adducting the former and rotating the latter.

The actions of the several muscles named are, as will be seen, not simple, but complex and associated, so that any deficiency that might result from impairment or loss of the function of any one or more might be in large measure made good by the compensatory action of others. In addition, the muscles under consideration are innervated principally from the brachial plexus or the nerves constituting or originating from it, although

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some of the muscles receive fibers from the cervical plexus, and the trapezius is supplied by the spinal accessory; so that, while it is not impossible for disorders affecting individual muscles to occur, it is more likely that several will suffer as the result of a single lesion.

Isolated paralysis of the serratus magnus is rare. It is often complicated by paralysis of the deltoid, the supraspinatus, the infraspinatus and especially one or another portion of the trapezius. It is said to suffer often on account of the superficial and long course of its supplying nerve—the long thoracic on the side of the neck and chest. The most common cause is injury to the nerve in its peripheral course, as by a blow, a fall; or pressure, as by a heavy weight upon, or a crush, a punc-

ture to the muscle itself. Instances of hysterical paralysis of the serratus have also been recorded.

Paralysis of the serratus magnus is, by reason of the etiologic factors, more common in men than in women, and, apart from infection and refrigeratory causes, as well as progressive muscular atrophy and dystrophy, occurs principally in adults and is more common on the right side than the left. Occasionally the muscles on both sides are affected in succession. The onset of the paralysis, particularly if of peripheral origin, is often preceded by pain in the supraclavicular fossa, radiating to the ear, the occiput, the scapular region and the arm, and this may persist for a variable period of time.

There has been some difference of opinion as to the position of the scapula when the arm is at rest in the presence of paralysis of the serratus. By some it is thought that the shoulder undergoes no change in position under these circumstances; others, however, have contended that the scapula becomes elevated and its inner border approximated to the vertebral column and

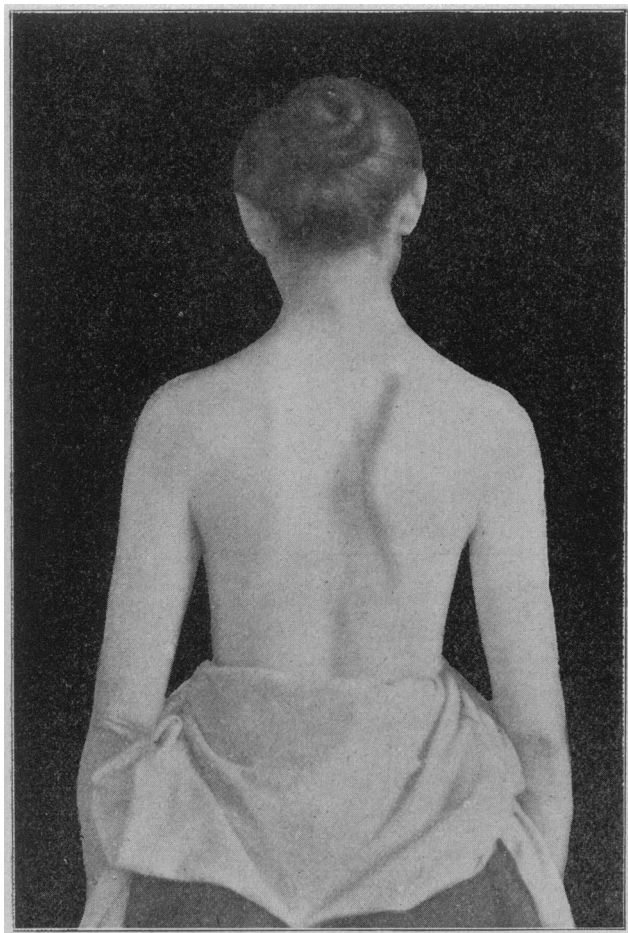


Fig. 1.—Displacement of the right scapula when the patient first came under observation.

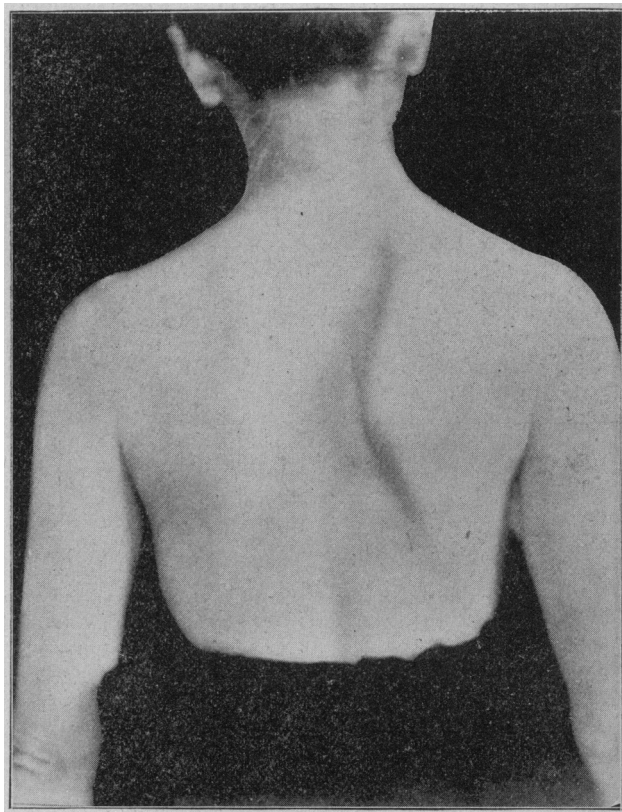


Fig. 2.—Displacement of the right scapula after the patient had been under treatment for two months.

tured or a gunshot wound of, the shoulder, involving especially the supraspinous region; or compression by contraction of the scalenus medius muscle, through which the nerve passes. The nerve, further, may be injured in various ways in the axillary cavity. Cold and wet and the influences thought to be contributory to rheumatism may cause serratus-palsy, and inflammation of the long thoracic nerve may develop in the course of infectious diseases, typhoid fever, influenza, diphtheria, rheumatism, erysipelas and the puerperal state. The serratus magnus may suffer, together with other shoulder-muscles, in the presence of progressive muscular atrophy, progressive muscular dystrophy, acute anterior poliomyelitis, less commonly in the presence of cerebral paralysis and least of all in consequence of direct injury

directed obliquely upward and outward from below, while the inferior angle exhibits a wing-like projection backward and the outer border assumes a more nearly horizontal position. More recently it has been maintained that the median border retains its direction parallel with the vertebral column.

Generally the patients are unable to elevate the arm above the horizontal, and when this is attempted the median border of the scapula approaches the vertebral column. If the arm is held horizontally in front the median border and the inferior angle of the scapula are removed from the thorax and the scapula stands off like a wing, an excavation resulting, in which the hand can be introduced. The arm can sometimes be raised above the horizontal by means of a sudden jerk, especially if

the upper part of the body be inclined backward. This movement can be effected also if the inferior angle of the scapula be rotated downward and outward and be pressed against the chest by another person. The patient also has difficulty in performing pushing movements and in crossing the arms in front. Sensory changes are generally wanting, and the electric alterations vary with the nature and the intensity of the underlying cause.

Paralysis of the trapezius may result from exposure to cold and wet, gunshot and punctured wounds, blows, operations, disease of the vertebral column and the posterior portion of the base of the skull, of the spinal cord and medulla, or inflammation of the accessory nerve, from any other cause. It may be a manifestation of syringomyelia or of tabes, or of progressive muscular dystrophy or spinal progressive muscular atrophy. The symptoms vary in accordance with the portion of the muscle affected and the degree of involvement. The trapezius is constituted of three parts: an upper or

does not rise so high as its fellow. The elevator muscle of the shoulder becomes prominent. The arm can be raised above the horizontal, especially if the clavicular portion is but little if at all affected, though not so well as its fellow, nor can the shoulder be drawn backward as well as normally.

The upper portion of the trapezius often escapes and when involved is so after the others. The middle and lower portions are usually involved together, though the latter may suffer before the former. When the upper third is involved moderate elevation of the shoulder is still possible. The affected shoulder is raised in deep inspiration. Paralysis of the middle third gives rise to a rocking movement of the scapula. The acromial extremity is lower than usual, while the inferior angle is higher

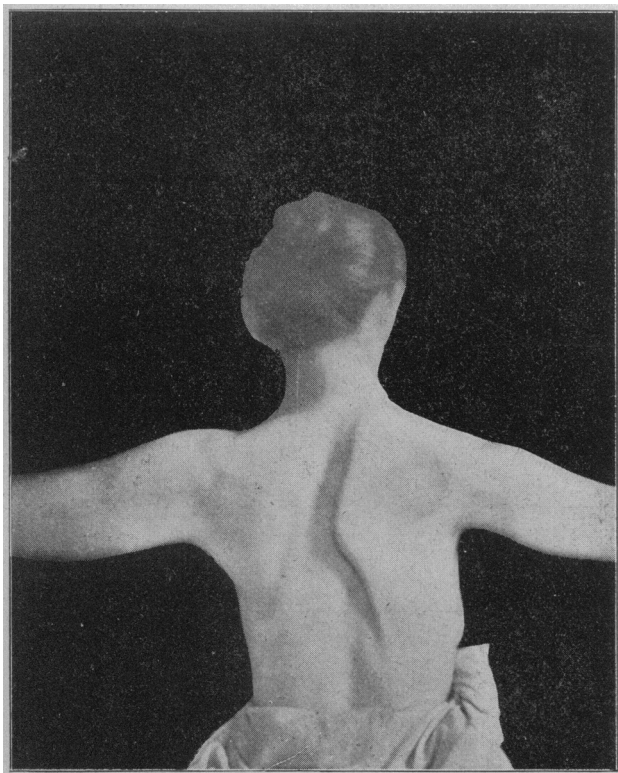


Fig. 3.—Displacement of the right scapula when the upper extremity was extended horizontally at the side.

clavicular, a middle and an inferior. The first or respiratory portion passes from the occiput to the outer third of the clavicle and draws the head downward and rotates it to the opposite side when the shoulder is fixed. The middle portion passes from the ligamentum nuchæ and the upper three dorsal vertebræ to the acromion and outer half of the spine of the scapula and is the proper elevator of the scapula. The inferior portion passes from the fourth dorsal vertebra and goes below to the inner half of the spine of the scapula and brings the median border of the scapula toward the vertebral column.

If the entire muscle is paralyzed the shoulder droops, the scapula being displaced downward and forward and separated from the spine and its inner border is oblique from below and within upward and outward. In raising the arm the scapula remains applied to the chest and moves outward as a whole. If the shoulder is elevated it

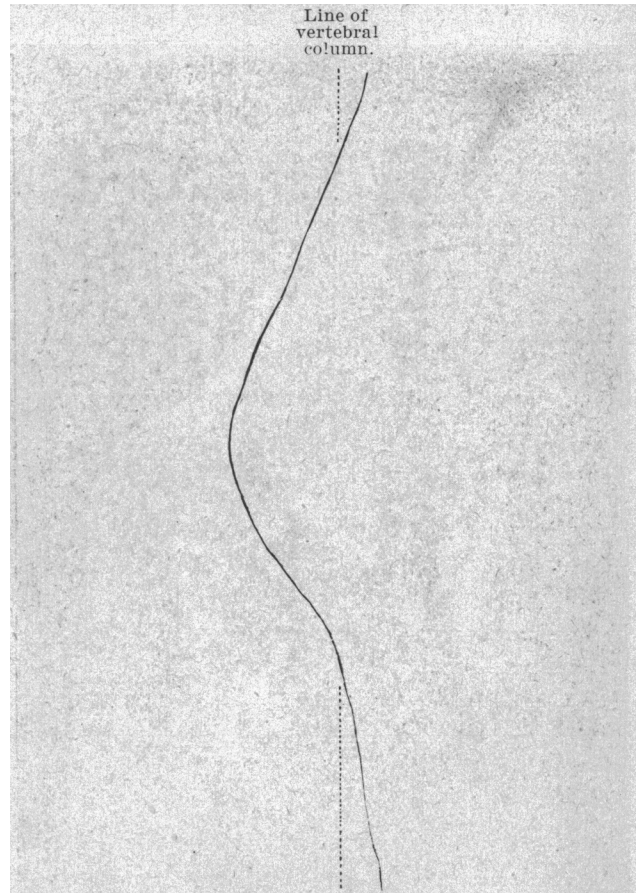


Fig. 4.—Diagrammatic representation of displacement of the right scapula when the upper extremity was extended horizontally at the side.

than usual and it approaches the middle line, the inner border of the scapula passing obliquely from above and without downward and inward as if the bone were suspended at its upper inner angle by the elevator muscle of the scapula. When the inferior third of the trapezius is paralyzed the symptoms are much the same as those attending paralysis of the middle third, but in intensified degree. The scapula recedes from the spine, the acromion is depressed, the clavicle is prominent and the supraclavicular fossa is marked.

In the presence of disease of the posterior external branch of the spinal accessory nerve the sterno-mastoid also would be involved, while disease of the anterior internal branch would be attended with disturbance in the functions of the soft palate, the pharynx, the larynx and in the rhythm of the heart.

I wish to report three cases seen at the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases

in which the serratus and the trapezius were paralyzed, two in the service of Dr. S. Weir Mitchell, and one in that of Dr. Wharton Sinkler, to both of whom I am indebted for the privilege of making this use of them.

CASE 1.—M. J., a widow, 53 years old, was admitted to the hospital Jan. 29, 1901, when the following history was elicited: In May, 1900, hysterectomy had been performed for the removal of a fibroid tumor of the uterus, and the patient was kept in bed for four weeks. On the third day after the operation she complained of pain above the right clavicle, which persisted for three weeks and was worse at night. In the fourth week after the operation, on the third day that the patient was up, the nurse noticed a peculiarity of the right scapula, whose inferior angle was displaced. For several months the deformity became progressively more marked and thereafter it remained stationary. From the time of the operation the patient was more or less well able to comb her hair than previously, and her disability had grown gradually worse. For three months there had been some numbness in the fingers of both hands.

and directed inward and backward. The median border of the scapula passed obliquely upward and outward and a band apparently of muscular tissue (rhomboids) could be seen passing from this border in its lower third obliquely upward and inward, to be inserted into spines of the dorsal vertebrae. Above this was a slight depression, which was contributed to by the displacement backward, inward and upward of the inferior angle of the scapula. These features are exhibited in the photographs shown in Figs. 1 and 2, the first of which was obtained when the patient first presented herself, and the second about two months later. At first when the right upper extremity was elevated to the horizontal at the side the median border of the right scapula rode across the median line (Fig. 3), the rotation of the inferior angle becoming less from the action of the muscles attached to the upper portion of the median border, and making a depression measuring 42 mm. at its greatest depth at the inferior angle of the scapula. The deformity is exhibited diagrammatically in Fig. 4.

After two months of treatment with electricity and massage the median border of the right scapula, especi-

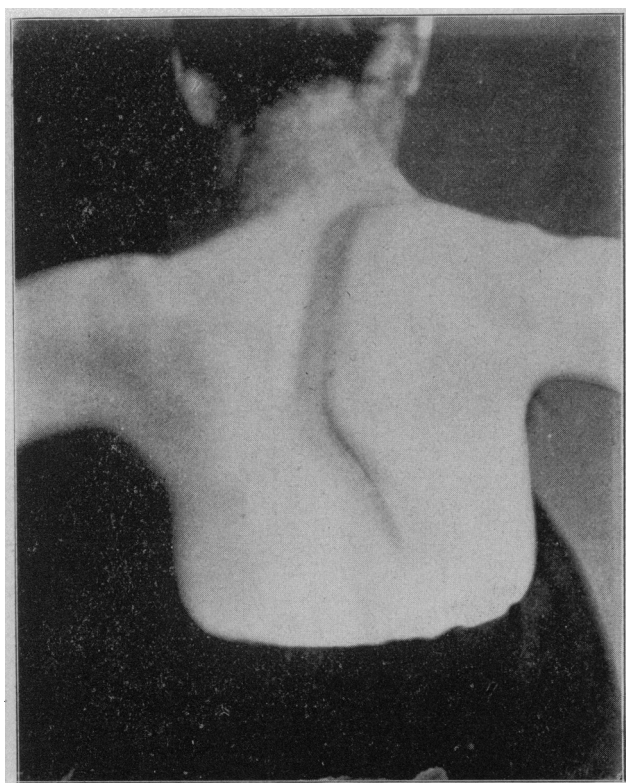


Fig. 5.—Displacement of the right scapula when the upper extremity was extended horizontally at the side, after two months of treatment.



Fig. 6.—Displacement of the right scapula when the upper extremity was elevated at the side to an angle of about 75°.

Muscular power was quite well preserved in the right upper extremity, but the member was readily fatigued and suffered somewhat from want of fixation of the scapula. After sewing and writing particularly, burning pain appeared in the right shoulder. There was some pain also in the back. The patient was pallid and complained of a sense of weakness in the abdomen as if its contents were falling. The appetite was impaired, the bowels constipated. The tongue was coated and the patient was annoyed by a bitter, coppery taste. There was no nausea or vomiting, but a sense of swimming in the head, followed by a feeling of pressure. The patient thought herself nervous, being readily agitated and easily worried. She suffered at times from slight headache and also from slight tremor.

When the patient stood erect the spine was quite straight. The right shoulder was higher than the left, and the inferior angle of the right scapula at about the level of the spine of the sixth dorsal vertebra was slightly displaced from the chest

ally the superior internal angle still approached the spine when the right arm was raised to the horizontal, but to a less degree than before becoming parallel with the spine when the arm was in the horizontal position (Fig. 5).

At first the patient was able to elevate the entire right upper extremity scarcely beyond the horizontal at the side, while there was no difficulty in elevating the left arm to a vertical position. Later, when the right arm at the side was continued upward from the horizontal, the superior internal angle of the scapula remained fixed and the inferior angle was rotated outward, but the right arm could not be raised entirely to the vertical position, but only to an angle of about 65 or 70 degrees with the horizontal. This is imperfectly shown in Fig. 6. When the arm was placed in the vertical position with artificial aid it could be held there for a brief period.

When the arms, after having been held out horizontally at the side, were rotated horizontally forward, the median border of the scapula receded from the chest-wall (Fig. 7), giving rise to a depression 52 millimeters deep (Fig. 8). When the upper extremities were held horizontally in front, as in the act of pushing, the displacement became more marked posteriorly, although the scapula was removed from the spine. The greatest measurement of the resulting concavity in this position was 50 mm. (Fig. 9). When this last movement was made a bundle of muscular fibers was raised from the chest, passing downward and outward from the inferior angle of the scapula, and leaving a shallow depression above and without, apparently in the muscular mass attached to the lower third of the lateral border of the scapula. When these efforts were made with the arms some twitching could be observed in the triceps.

The muscular reflexes were scarcely as pronounced on

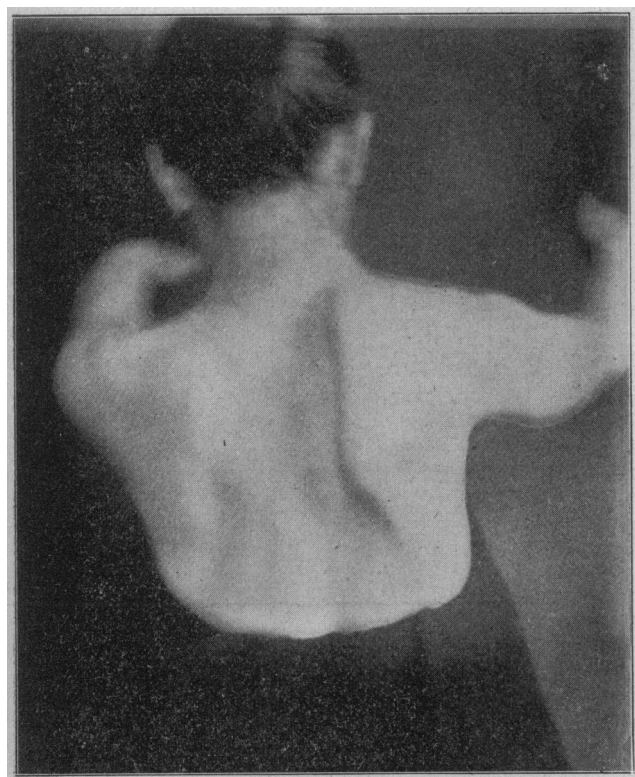


Fig. 7.—Displacement of the right scapula when the upper extremity was held horizontally in front.

the right as on the left in the scapular region, as well as in the arm, particularly in the region of atrophy below the oblique muscular band passing from the scapula to the spine. A tap over the upper part of the infraspinatus caused the arm to be abducted, while a tap over the middle of the same bunch caused the arm to be rotated inward. A tap on the supraspinatus caused the shoulder to be raised and a tap below the outer extremity of the spine of the scapula caused the arm to be adducted. There was tenderness on percussion and on pressure over the superior angle of the scapula, more marked on the right.

The right arm and forearm appeared distinctly smaller than the left, although by measurement the circumference of the right arm was found to be between  $7\frac{3}{4}$  and 8 inches, and that of the left arm between 7 7-8 and  $8\frac{1}{4}$  inches and that of the right forearm below the elbow  $7\frac{1}{2}$  inches and of the left forearm  $7\frac{3}{4}$  inches. Electric examination kindly made by Dr. H. P. Boyer

elicited normal responses in the supraspinatus, infraspinatus, deltoid, rhomboids and the latissimus dorsi, with degenerative reaction and slight faradic response in the upper portion of the trapezius and no response whatever to galvanism or faradaism in the lower portion of the trapezius. Despite persistent effort the serratus magnus could not be isolated.

The patient was right-handed and conscious of the weakness in the right upper extremity since the operation. The grasp measured by the dynamometer proved less vigorous on the right than on the left. The greatest difficulty consisted in bringing the shoulder, and therefore, the arm toward the head or

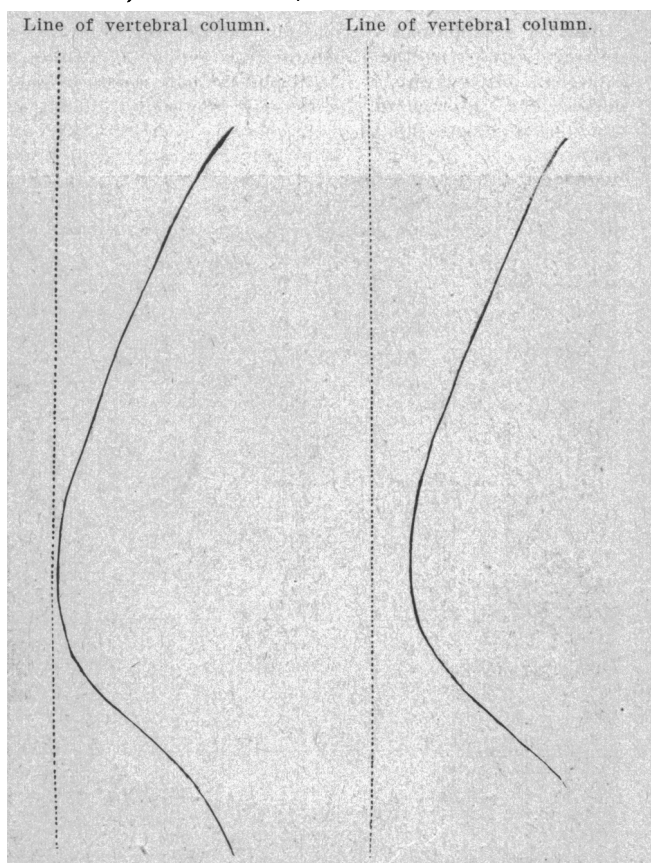


Fig. 8.—Depression caused by recession of the median border of the right scapula from the chest wall when the upper extremity was held horizontally in front.

Fig. 9.—Depression caused by recession of the median border of the right scapula from the chest wall when the upper extremity was held horizontally in front as in the act of pushing.

the middle line or the opposite side. Sensibility was entirely preserved all about the right scapula and the adjacent spine. The knee-jerks were extremely sensitive, active, and marked. Ankle clonus could not be elicited. The action of the heart was rhythmic, its sounds clear, the second being relatively accentuated at the right base. The radial artery was small and the tension moderate. The urine was of amber color, of neutral reaction, 1024 in specific gravity, free from albumin and sugar and it contained only a few epithelial and blood cells.

The accompanying photographs exhibit fairly well the position of the scapula under varying circumstances and the accompanying diagrams exhibit the relation of the inferior angle of the scapula with the vertebral column in different positions of the arm.

On account of the obvious local wasting the condition was at first believed to be one of paralysis of the trapezius and this view was subsequently confirmed by the results of the electric examination. The deformity, how-

ever, is so typical of paralysis of the serratus magnus that although we were unable to demonstrate the presence of degenerative electric reaction in this muscle, there seems to be little doubt that it also is involved in the morbid process. The patient gave a previous history of rheumatic pains at different times in the course of the preceding five or six years, but inasmuch as the symptoms had developed only in the sequence of an operation in which I believe the Trendelenburg position was used, and in which the parts affected might readily have been subjected to pressure, I am inclined to think that her condition arose from inflammation of branches of the spinal accessory or of the cervical plexus and the long thoracic resulting therefrom.

CASE 2.—T. H., an iron painter, unmarried, white, 28 years old, was admitted to the Orthopedic Hospital and Infirmary for Nervous Diseases Jan. 4, 1900, complaining of pain at the nape of the neck and in the occipital region on the left side, which was constantly present, though worse paroxysmally. There was also jerking to and from the right, which was relieved by the application of an ice-bag. The head, under ordinary circumstances, was held constantly deflected toward the right. Sometimes pain was present over the entire head.

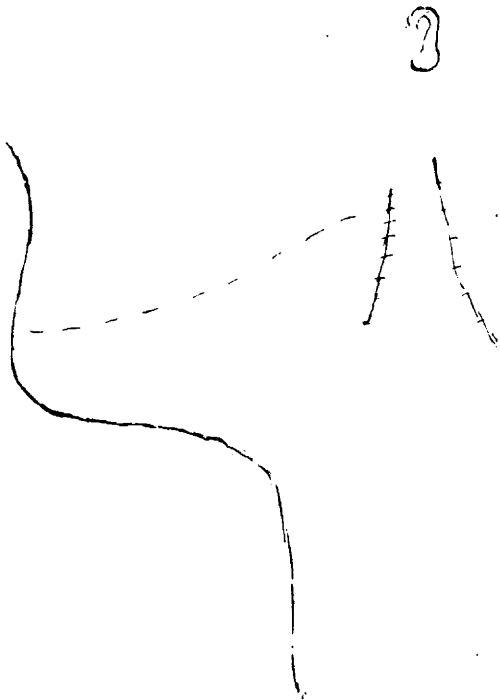


Fig. 10.—Situation of cicatrices on the left side of the neck.

Sleep was disturbed at times in consequence of the pain.

On inquiry it was learned that in April, 1897, the man had been seized with sharp, shooting pain below and behind the left half of the inferior maxilla, extending to the nape of the neck, to the occiput, to the left side of the head and to the left brow. In a short while the head began to be jerked toward the right and at times to be fixed, facing toward the right. An operation was performed in January, 1898, a piece of the nerve supplying the left sterno-mastoid (three-quarters of an inch) being excised. The nerve was also stretched, and, according to the patient's statement the ends were united, but as to the accuracy of this there may be reasonable doubt. No relief followed. About April, 1898, the left trapezius muscle or the supplying nerve was operated upon and paralysis of the left arm followed, with impaired sensibility, which persisted until the succeeding August. Some weakness was still present in this member when the patient came under observation. Improvement in the pain, the jerking and the stiffness began slowly to take place in the sequence of the second operation, and the patient was measurably comfortable from August, 1898, to about June, 1899. Since this last date, however, he

had grown gradually worse, and since October he had been incapacitated for his work.

The patient presented two cicatrices on the left side of the neck, one 7 cm. long, below the ear, along the anterior margin of the sterno-mastoid muscle, the other 9 cm. long along the anterior border of the trapezius. (Fig. 10.) The interval between the muscles near the clavicle and the shoulder was painful on pressure. The lines of the cicatrices exhibited marked diminution in sensibility, both tactile and painful, growing less as one receded from them. Localization also was poor, impressions being referred sometimes to the ear, at other times toward the clavicle. Sensibility on the left half of the chest to below the level of the nipple was less acute than on the right, also on the left arm than on the right

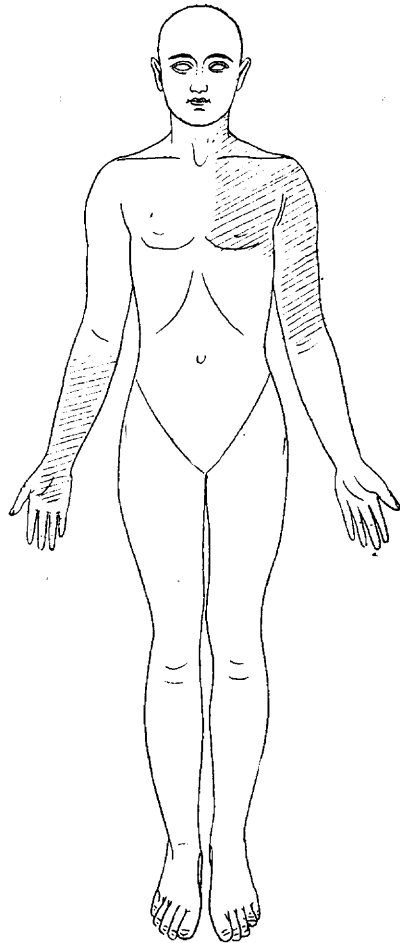


Fig. 11.—Areas of hypesthesia, ventral aspect.

arm, although at times it was less acute on the right forearm than on the left forearm. (Figs. 11 and 12.) Sometimes a single impression was felt as two, but in different situations—sometimes simultaneously, sometimes successively. There was increased rapidity of breathing, the respiration being 38 per minute at one time, and 48 per minute at another observation, and there was want of synchronousness and range in the movements of the two sides of the chest, the left rising earlier and expanding more fully than the right. Breathing, further, was somewhat labored, particularly on the left, where the auxiliary muscles were drawn upon. There was some fibrillary tremor in the muscles of the left side of the neck. The scapula occupied a winged attitude and there was apparent absence of the rhomboids on the left, giving rise to a distinct depression between the median border of the scapula and the spine.

Electric examination disclosed degenerative reaction in the left trapezius, while all of the other muscles responded promptly to faradism. A greater faradic current, however, was required to induce contraction of the left trapezius. The circumference of the right arm was 24 cm., that of the left 23. The circumference of the right forearm below the elbow was

24 cm., that of the left 23 cm. The grasp of the right hand was more vigorous than that of the left. Examination of the fields of vision by Dr. A. G. Thomson disclosed contraction, but no reversal. There was no lesion of the fundus. The knee-jerks were preserved. The action of the heart was rhythmic, the sound clear.

In the family history the only noteworthy point was the death of the father possibly from paralysis agitans. Of interest in the personal history was the fact that the patient had influenza prior to the onset of this trouble. This attack left him weak and prostrated, both nervously and physically. In his work he used mineral and graphite paints mostly, but so far as he knew he had never suffered from metallic poisoning. There was also no blue line at the margin of the gums. The man had had an attack of gonorrhea, but so far as he knew he had escaped syphilis. He partook of alcoholics, tea and coffee, with considerable freedom. He had suffered a fracture

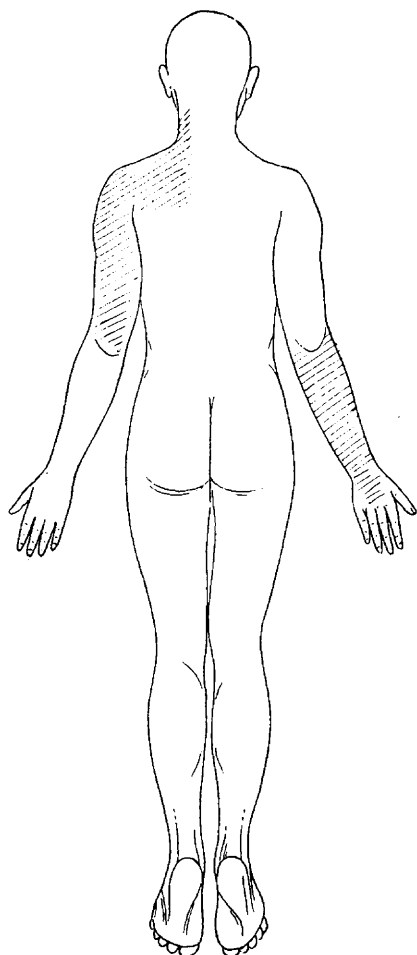


Fig. 12.—Areas of hypesthesia, dorsal aspect.

of the right leg at the age of 23 by a fall from a bridge 20 feet high. There had been no other mental or physical shock.

The accompanying diagrams illustrate the distribution of the impaired sensibility and also the situation and relative size of the cicatrices on the side of the neck.

In this case also the condition was originally looked upon as one of paralysis of the trapezius, but less attention was paid to this as the patient was more urgently desirous of relief from the distressing spasmodic condition of the head. On subsequent reflection, however, it seems probable that in addition to the trapezius and the rhomboid, the serratus magnus also was paralyzed. We had hoped to secure a photograph of the patient, but he evidently became alarmed by the suggestion of a repetition of the electric examination, which had not proved a source of enjoyment, and on going out for a walk he failed to return. Whether or not the torticollis was in

any way due to the preceding attack of grip can not, of course, be determined, but the possibility is not to be ignored. That the trapezius and the serratus were then paralyzed seems unlikely, and it is far more probable that this condition followed injury or division of their respective nerves in the course of the operations on the neck. The hyperesthesia of irregular distribution is strongly suggestive of hysteria, as was in some respects also the general demeanor of the patient.

CASE 3.—G. H., a girl, 14 years old, presented herself at the hospital on Jan. 17, 1901, with the statement that following an attack of diphtheria four months previously the mother had noticed a peculiar attitude of the right scapula, which stood off from the chest when the shoulder was elevated. Several weeks later pain appeared on the posterior aspect of the scapula, where there was also tenderness. The shoulder could be retracted, and the deformity resulting on voluntary effort was thought to be due to weakness of the trapezius at least. The patient was unable to carry heavy weights or to lift heavy articles or to hold them with her right hand. At times there was pain on movement of the right arm referred to the shoulder. There was some tenderness also in front of the head of the radius. There was no apparent wasting, no fascicular twitching and the reflexes were all preserved. Station was steady, the knee-jerks were preserved, and the grasp of the right hand was more vigorous than that of the left. The action of the heart was rhythmic and its sounds were clear. The appetite was moderate, the bowels were regular and sleep was fairly good. Menstruation was regular, painful and moderate. The parents were well, as were also one brother and two sisters. Two brothers had died in convulsions, and one sister from inflammation of the brain. The patient had had measles at 7 months, whooping cough at 2 years, mumps, and also acute rheumatism at 12 years. She had suffered no traumatism, and drank three cups of coffee daily and no tea.

The patient was seen but once and a detailed study of her case was not made. As indicated, the condition was thought to be due to paralysis of the trapezius, resulting from inflammation of the supplying nerves as a complication or sequel of diphtheria. The striking and characteristic displacement of the scapula, however, makes it probable that the serratus also was parietic.

There is some difference of opinion as to whether the trapezius is innervated solely by the spinal accessory nerve, or additionally by the branches of the cervical plexus. The first and the third of the cases here recorded would seem to lend support to the latter view, inasmuch as one would expect a lesion of the spinal accessory nerve to be attended with paralysis also of the sterno-mastoid, but of which there was in neither of these cases any evidence. On the other hand, one can, of course, conceive of a lesion of branches for the trapezius rather than of the trunk of the spinal accessory at a point beyond the giving off of the branches for the sterno-mastoid muscle. In the second case, in which there was no reason to doubt the existence of a lesion of the spinal accessory nerve, both the trapezius and the sterno-mastoid were affected.

**Cortical Center for the Functions of the Stomach.**—Sollier locates the stomach center in the parietal lobe of the brain, and describes in the *Revue Neurologique* of November 30 a case which he thinks confirms this localization. A boy of 11 was hit on the head with a pickax and was unconscious for a week, with no medical care. He was then trephined, and the coma continued for six days longer, although he took a little liquid food. Then he roused and his prodigious appetite and perfect digestion of the enormous quantities he ate, are accepted by Sollier as evidence that the stomach center had been stimulated to hyperactivity by the trauma and resulting abscess just in front of it. The boulimia gradually subsided in the course of the third month.