

would they resist it, but from their obliquely downward and outward course they would pull the lower angle of the scapula upwards and inwards, and cause the vertebral border to assume a direction very obliquely upwards and outwards from the mesial line of the back. This direction of the vertebral border is not decidedly marked; hence it follows that the rhomboidei must also have lost their contractile power. Now paralysis of the serratus and rhomboids together would produce the condition of parts we are considering, while the trapezius and levator anguli scapulæ still retained their power; the first of these holding the scapula in place laterally and preventing rotation downwards and forwards; the latter holding the scapula up and preventing it from sinking down perpendicularly along the side. If we examine the origin of the nerves supplying these muscles attached to the scapula, we may arrive at a better understanding of the lesions that are present. The trapezius is supplied chiefly by the spinal accessory, but receives communications from the cervical plexus; this therefore may be laid aside for present purposes. The levator anguli scapulæ is supplied chiefly by branches from the cervical plexus; but the cervical plexus is formed by the anterior branches of the four upper cervical nerves, and is therefore above the source of nerve-supply for the serratus magnus and rhomboidei. The rhomboid muscles and serratus magnus are supplied by branches from the 5th and 6th cervical, the rhomboid branches being from the 5th alone, and that to the serratus—the posterior thoracic—from both the 5th and 6th. It is quite reasonable to suppose that if the cause of paralysis existed at the roots of the nerve to the serratus magnus, the nerves to the rhomboidei also, which arise with one of the roots of the foregoing, would suffer, and we ought to have paralysis of the rhomboidei co-existing with paralysis of the serratus magnus. Putzel, although he refers it to paralysis of this last muscle alone, very judiciously adds, "The other muscles of the scapula and shoulder should also be carefully examined, as we not infrequently find that the same cause which has produced the affection under consideration, has also given rise to paralysis of some of the other adjacent muscles." We are therefore forced to the conclusion that "angel-wing deformity" is due to paralysis, more or less complete, of the serratus magnus and the two rhomboids, and that the projection of the

lower angle of the scapula heretofore described as "dislocation over the latissimus dorsi," is due to the relaxed condition of the muscles that hold the scapula in place, and is not an independent affection. Of course the paralysis may not stop here, but other muscles of the shoulder may become implicated, according to the gravity of the cause producing the injury to the nerves; but for the production of the affection under consideration paralysis of the three muscles stated is sufficient, and all of these, I hold, must be involved to produce a typical case.

A few words with respect to the treatment of this disease may not be out of place. As the subjects of it are generally weakly and ill-nourished of over-worked young persons, the first great object is to improve the general condition of the patient. Fresh air, gentle exercise, good diet, with the use of the shower bath or salt-water bathing, friction over the body, chalybeate tonics, nux-vomica, and such other remedies as adapt themselves to the circumstances of the patient. Putzel, from whose work I have already quoted, recommends electricity as the great means of cure. One electrode should be placed over the roots of the affected nerves (on the neck, above the clavicle) and the other over their distribution, as in the axilla, along the origins of the serratus magnus, or behind the chest, between it and the outstanding scapula. Counter-irritation, if there is pain, and the use of morphia when urgently demanded. Many other means will readily suggest themselves to the attendant physician, once he is fully satisfied as to the pathology and etiology of the disease.

DANGER OF THE PARASITIC THEORIES.

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Audi alterum partem.

The September number of the *Gazeta Medica da Bahia*, contains an article by Dr. Jousset de Belesme, on the subject of the "Danger of the Parasitic Theories," which may not perhaps, at the present time, when there seems to be so strong a tendency in the medical world to rush into premature etiological conclusions, be altogether unprofitable, for, whether the parasitic theory of infectious diseases ultimately proves to be correct, or the contrary, a free exposition, alike of its