

exercise has ever been taken for any lengthened period. The calf muscles are not so well developed as those of the upper limbs. The pectorals and serrati can be made to bulge well. On light palpation the muscles show no abnormal firmness, though they quickly harden under firm kneading. On putting any group into strong voluntary contraction (this applies chiefly to the limbs) the muscles are found for a number of seconds to be of iron hardness; but this rapidly passes off and, if the contraction be maintained, a sense of fatigue rapidly supervenes and the muscles become somewhat flabby for a short time.

*Peculiarity of movement.*—This is entirely restricted to voluntary movements, and, to quote Hale White, "Consists in the fact that the contraction of the muscle which the patient wills to move is slower than normal, and that, because it relaxes *gradually and very slowly*, it remains for some seconds more or less contracted; this contraction is so strong that the antagonistic muscles cannot overcome it. If a certain voluntary movement is repeated several times, the patient begins to execute each movement before the preceding contraction has completely relaxed, and thus his difficulty as regards the stiffness becomes less and less in each movement." In the writer's case *all* voluntary movements are more or less affected, and they appear to be affected in proportion to the bulk of the muscular group involved. Thus, if, after a period of rest in a low chair, he attempts to rise and walk away, he can rise though somewhat slowly, and, preferably, with some help from his arms, but the advance of the leg in the first step is then checked by a painless cramp of the extensor muscles which have been thrown into action in rising, the other leg follows before the tonic spasm has passed completely away in the first, only to be checked in its turn by a cramp of the knee extensor and associated muscles. The second movement of the first leg is initiated before the spasm has completely relaxed, but the cramp this time is of less duration. With each succeeding advance of either limb the duration of the spasm and stiffness becomes rapidly less, until in a varying number of strides a normal gait is evolved. Whilst this is taking place, the stiff clumsiness of the movements is very noticeable, though the patient from long experience has learnt to mask this to some extent. Should running be suddenly attempted, the difficulty is exaggerated, the rapid initiation of fresh leg movements before the preceding spasm is fully relaxed necessitating some help from the arms to maintain the balance and secure better leverage until the legs get "limbered up." Should he at this stage strike his foot against any obstruction, a fresh spasm results and he is very apt to fall headlong, saving himself with difficulty from injury,