

as they are termed, which run through grooves at the wrist, and so along the hand, being fastened finally by strong bands into the finger bones. Each one of the grooves through which these tendons run is kept lubricated by the same oily fluid, which, as we have already seen, renders supple the movements of all the joints. And so the great strength of the human hand is secured by a number of these fine tendons, each one taking up the minimum



Fig. 28.—The back of the hand showing the tendons continued along the fingers.

of space, whilst exerting the maximum of power.

The injuries to which muscles are liable are comparatively simple, and easily understood, and briefly may be said to consist of *Strains* and *Ruptures*. They are also subject to well-marked diseases, which are described as *Fatty Infiltration* and *Fatty Degeneration*; and as a final condition of long disuse, they are also subject to the condition of *Atrophy* or shrinking; just as in the opposite condition in the

athlete, certain muscles become greatly enlarged and strengthened, or, as it is termed, *Hypertrophied*.

The most frequent injury, of course, is that which is known as a *Strain*; and it is caused by accidents which are so common that there is no need to particularise them. Strains may be very slight, as the result of a comparatively slight exertion; or they may be very severe, as, for example, when a heavy person falls down a flight of stairs, and, struggling to save himself, seriously injures the large muscles in his legs and arms. The actual result of a *Strain*, however, whether slight or severe, is a stretching and tearing of some muscular fibres, and from the torn ends the escape of a certain amount of blood. So we find that the symptoms of a *Strain* are pain upon movement of the injured muscle, with more or less swelling and tenderness on pressure over the affected part. Examples of this accident, which are probably familiar to everyone, are what is called the "tennis arm," or the "rink leg." There is not only the immediate pain of the accident, but tenderness and a certain amount of weakness always exists for a shorter or longer time afterwards. The treatment, of course, is the same in any case, varied only by the length of time which is necessary to effect a cure. Rest is the first essential in order to allow Nature to repair the torn fibres, and permit the blood, which has been poured out from them, to become absorbed. Consequently, the affected part must be kept entirely at rest, with cold applications, as a rule, such as the ordinary lead lotion with a certain amount of spirit added to it, so as to make it more quickly evaporate, and thus more quickly cool the affected surface. When the swelling and tenderness have somewhat subsided, it becomes important that what are termed *passive movements* should be made; that is to say, that the affected muscles should be gently moved so as to restore their activity. To assist this process it is often necessary for the nurse to rub some stimulating liniment over the affected surface, or to regularly massage the injured muscle.

The *Rupture* of a muscle, of course, arises from exactly the same causes as a *Strain*, but is the result either of a *Strain* acting upon a weak and easily torn muscle, or of a very violent injury. The recovery from a serious muscular *Rupture* is often very slow and tedious, and requires great patience on the part both of the patient, his doctor, and his nurse; because, whilst the seriously injured muscle is being kept entirely at rest in order to secure its proper repair, all the other muscles around it are also thrown out of work, and, therefore, suffer considerably in strength.

[previous page](#)

[next page](#)