or relatively stationary, whilst that to which the other end is fixed is more or less movable. In this case, the attachment upon the stationary bone is termed the *origin*, and that to the movable bone the *insertion* of the muscle. Sometimes the fibres of the muscles are fixed directly into the bones along hard ridges, but more commonly the muscles end in strong cords or bands of fibrous tissue, called *tendons*, which are inserted into the bones. When the tendons or muscles play directly over hard surfaces, such as the ends of the bones, they are generally separated from these surfaces, and so friction is reduced to a minimum, by small bags containing fluid, which are called *bursæ*, the internal lining of which is similar to the internal membrane of joints, and secretes an oily fluid resembling the synovia. Sometimes these bags become inflamed from long continued pressure upon them, a most frequent example of which is seen in the condition popularly known as the

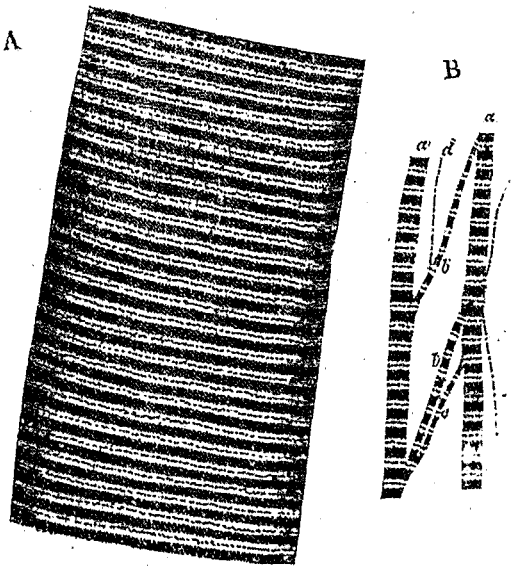

Fig. 26.—Microscopical Section of striated muscle. A. Single band. B. Interlacing fibres.

housemaid's knee, a strictly analogous condition being known as the *miner's elbow;* the kneeling of one inflames the bursa over the patella, while the pressure of the miner on his elbow, while hewing at the coal in front of him, causes inflammation of that over the olecranon. The consequence of this inflammation, which is termed *bursitis*, is first of all considerable swelling, with pain and redness over the affected place. This often disappears with no other treatment but rest, but if the swelling persists, it is customary to try first of all an application of iodine or some similar counter-irritant, so as to remove, if possible, the effused fluid, and if this measure fails, or if the contents of the bursal sac become purulent, an opening has to be made into it, treating it as if it were an ordinary abscess. Prevention, however, is better than cure, and when any tendency to *bursitis* shows itself, a thick pad of flannel or cotton wool should be worn over the bursa, so as to prevent the harmful pressure upon it.

When we look microscopically at the exact constitution of a muscle, we find that, as the accompanying illustration shows, it consists of a large number of fibres bound together, precisely as a piece of elastic consists of a number of threads all bound together by transverse bands around them; and, as was previously said, a broad piece of elastic is in its action strictly analogous to the action of muscular fibre. The fibres are bound together, by what is termed *connective tissue*, with blood vessels and nerves running amongst them, into small bundles, and these small bundles again are bound together by stronger fibres of connective tissue or fascia, so as to form muscles of various shapes and sizes. It is very easy to understand that muscle during life is a very elastic and soft substance; but when a muscle is removed from the body and the blood which it contains has been removed, pressure upon it causes a fluid to be exuded which coagulates very rapidly; and, at a shorter or longer time after death, this same coagulation takes place in the dead muscle, making it more or less opaque, instead of clear and transparent as during life; fixing it into hard rigid masses which retain the form which they possessed when this coagulation commenced. This is a very important practical fact, because it explains to you why the limbs become fixed in the position in which they are at death, and why a corpse passes into the condition which is known as the "death-stiffening," or *rigor mortis*. After the lapse of a certain time, this coagulated matter liquifies, and the muscles then pass into a loose and flaccid condition which marks the commencement of the putrefactive change. Doctors are, therefore, able to tell by the condition of the muscles of a dead body, and, to some extent, by its temperature, how long previously death had occurred.

Most muscles are of a deep red colour, which, of course, is due, in part, to the blood within their vessels; but not entirely so, because each fibre has a reddish colour of its own, probably due to the presence of a small quantity of the same *hæmoglobin* in which the blood corpuscles are so rich. Muscles may be conveniently divided into two classes, according to the manner in which the ends of

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