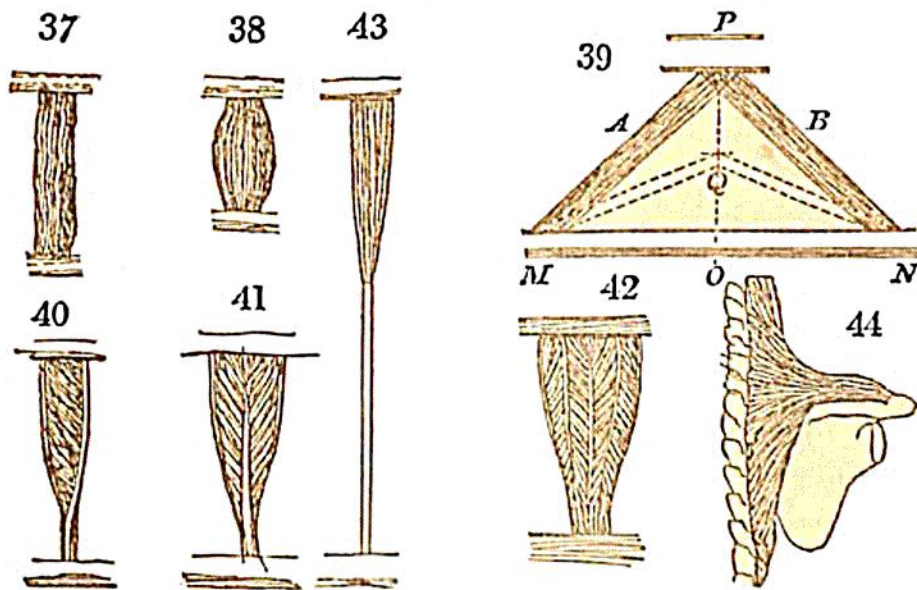


cate chemical processes of the living system generally elude our research, and the higher faculties of sensation and perception are dependent on still more recondite and mysterious powers of nature, the mechanical functions are effected by the simple properties of matter, and allow us a clearer insight into the wonderful art which has been exerted in their accomplishment.

Muscles, during their contraction, increase in thickness in the same proportion as they diminish in length.* It is on this account, more especially, that a knowledge of anatomy



is so necessary to the painter and the sculptor. In every movement and attitude of the body, some particular sets of muscles are in action, and consequently tense and prominent, while others are relaxed and flattened; differences which it is requisite that the artist should faithfully express, in order to give a correct representation of the living figure.

The dilatation of the muscular fibres in thickness, which accompanies their contraction in length, would, if these fibres had been loose and unconnected, have occasioned too great a separation and displacement, and have impeded their co-operation in one common effect. Nature has guarded against this evil by collecting a certain number of the elementary fibrils, and tying them together, with threads of

* This is illustrated by the annexed figures, 37 and 38, the former showing the relaxed and elongated, and the latter the contracted and swollen state of the same muscle.