

in opposite directions, and greatly facilitating the varied movements of the animal.*

A variety of still more complicated arrangements may be traced in the fibres of those muscles which invest hollow sacs, or receptacles, such as the stomach, (Fig. 51,) and the heart, (Fig. 52.) We find, in the substance of these organs, sets of fibres, which pass in a spiral direction, and which, consequently, unite the effects of both longitudinal and circular fibres; and, when combined with either of these, they serve to modify and regulate the actions of each organ in a great variety of ways.†

The infinite mechanical skill, with which the moving power has been applied to the purposes to be accomplished, is displayed not only in the larger organs, where great force is to be exerted, but also, in a still more conspicuous manner, in the execution of the smaller motions, requiring the most accurate regulation, and the nicest adjustments. We cannot but be struck with the accordance which may often, in these instances, be traced with human contrivances, where the greater motions are rapidly executed by one set of agents, acting with considerable power and velocity, while the minuter approximations to the exact positions are effected by a distinct part of the apparatus, capable of more delicate action, though with a smaller force. Thus, while the astronomer brings his telescope round by powerful machinery, so as to direct it to that part of the heavens, where the object he wishes to view is situated, a more nice mechanism is employed to direct the instrument accurately to the exact point; and, again, another is provided for making the proper focal adjustments. Many parallel cases occur in

* Carus, *Tabulæ Anat. Comp.* fol. Tab. I. Fig. 6.

† The muscular fibres of the heart are disposed in two layers; each set passing in a spiral course from the basis, or broad part, to the point or apex; but the direction of the turns being different in each; the two layers cross or decussate, producing the effect and procuring the advantages of a combination of oblique muscles already explained. Thus beautifully is the arrangement of the muscular fibres of the heart calculated to produce the rapid and complete expulsion of its contained blood, with the smallest amount of contraction in the individual fibres.