

relation of blood supply to cardiac activity, and of Henderson upon ventricular movements, are far reaching in their results and enable us more fully to apprehend the questions arising in connexion with this subject. The former has shown most distinctly that the ventricles are composed of a simple long band of muscle beginning and ending with a tendon. It has its origin in the connective tissue of the auriculo-ventricular junction on one side of the heart; it passes around the outer wall of that side and reaches the ventricular septum, whence it goes on to encircle the outer wall of the other ventricle, and finally terminates in the tendinous cords of that side. It is probable that the fibres of the auriculo-ventricular bundle enter into direct relation with the centre of this long scroll.

Some of the results obtained by Keith have already been referred to, but the observations which he has made from the standpoint of comparative anatomy deserve to be recalled. He has shown that the sinus venosus, the auricular canal, the auricle, the ventricle, and the bulbus, are all represented in the mammalian heart, and he has been able not merely to trace these primary divisions, but to show how in the evolution of the heart in the higher mammals these various parts have been modified to suit the requirements of development. The results of the investigations of Porter and of Henderson have been of the greatest service to us in our clinical work on disturbances of the heart muscle.

Turning to the results of experimental physiology as directed more particularly to our subject, we have to acknowledge a deep debt of gratitude to certain distinguished observers. First again, physiologically as well as anatomically, comes the name of Gaskell, in the epoch-making work to which reference has already been made. He pointed out the existence of a natural block of the auriculo-ventricular junction, and further showed that a more or less complete stoppage could be produced either by section of the auricle or by increase in the natural block. In this way he was able at will to interrupt the passage of impulses more or less completely. His, from a number of experimental investigations, showed that interference with the conduction of impulses could be produced by section of the auriculo-ventricular band. It is, however, particularly to Erlanger that we are indebted for a study of this important subject. By his ingenious method of experimentation the auriculo-ventricular bundle can be subjected to varying degrees of pressure, and he has been able in this way, as is now widely known, to produce at will every degree of partial or complete blocking of impulses. From the experiments of Gaskell, His, and Erlanger, it is clear that the upper parts of the heart possess the