

asserting that the murmur is produced at or about the pulmonary orifice, and, second, those setting forth that the murmur is not of pulmonary origin at all, but arises at one or other of the auriculo-ventricular orifices and is merely conducted towards the pulmonary area. It might be mentioned in passing that Potain believed that all functional heart murmurs were cardio-pulmonary, i. e., were produced in the lung by the movements of the heart.

Balfour and Naunyn believed that this murmur heard in the pulmonary area was really due to mitral regurgitation. In favor of this view it was urged that a pulsation could frequently be observed in the second left intercostal space farther out than the normal position of the pulmonary artery, and that frequently the murmur was louder over this outer pulsation than elsewhere. It was considered that this pulsation was due to the left auricular appendix, which, being dilated by the leakage through the mitral orifice, was thrust forward against the chest wall. To my mind conclusive arguments can be used against such a theory. In the first place when a non-functional mitral incompetency exists, i. e., one due to organic disease, the systolic murmur is best heard near the cardiac apex and is transmitted towards the axilla. When such a regurgitation exists, pulsation in the outer part of the second left intercostal space is not observed. Again, in cases of debility a loud murmur is frequently heard in the pulmonary region and another in the mitral area and as the individual improves in health the latter disappears while the former persists for some time. I have again and again observed this clinically. Evidently for a time in such cases there is some mitral leakage which produces a murmur in the ordinary position and as the mitral sphincter improves in tone this leakage stops and the mitral murmur in consequence disappears, and yet for some time longer the murmur in the pulmonary area persists. A second theory is that the murmur is due to tricuspid regurgitation, but this is not a very popular view and it is hard to understand why a tricuspid murmur should in case of debility be heard in the pulmonary region rather than in its own position, and further when cases of debility develop tricuspid incompetence, as they often do, then a murmur develops in the tricuspid area, that is over the lower part of the sternum and is accompanied by true venous pulsation in the neck.

Thus it is most probable to my mind that the murmur is produced somewhere near the pulmonary orifice. If this be the case, then what causes it there? It may be taken as proven that an altered condition of the blood will not per se produce a murmur at a normal orifice. Perhaps the belief in the haemic production of murmurs is the most commonly held one that exists and yet it has been proved again and again both experimentally and clinically that a watery state of the blood does not, other