

vidual. That, under ordinary circumstances, no murmur should be produced by the entrance of blood from auricle to ventricle is, perhaps, not remarkable when one reflects upon the large size of the orifice—so large, after-all, that auricle and ventricle represent in diastole practically one cavity, and the relatively low pressure under which the blood passes from auricle to ventricle. But when one considers the normal emptying of the ventricle, the structure of the aortic and pulmonic rings, and that of the vessel beyond, the wonder is not that systolic murmurs at pulmonic and aortic orifices often occur, but, as has been well said before, I think by Dr. Broadbent, that they are not always present. A ventricle contracting with considerable force, throwing a large quantity of blood through the fibrous ring at the root of the aorta or pulmonary artery, a ring which is practically indistensible, into a vessel beyond capable of great dilatation—here we have elements which one might well fancy should produce always a relative stenosis sufficient to result in fluid veins beyond the point of relative constriction, i.e., the normal ring. That, with a dilatable aorta, an unusually large quantity of blood thrown out of the ventricle with greater force through a normal ring may produce murmurs, and loud murmurs, is clearly shown in aortic insufficiency, especially in young individuals. How often, in such cases, a mistaken diagnosis of aneurism is made is familiar to all clinicians. But as we all know, there is a variety of conditions in which, without disease of the valves or muscle of the heart, murmurs are audible. Certain of these functional murmurs are so constant in their character as to be immediately recognizable. There are, it seems to me, at least three such clinical pictures.

1. The basic, commonly called "pulmonary" systolic murmur.

The murmurs, which are usually rather soft in character, and generally associated with an element of the first sound, are best audible in the third left interspace, but are often heard with less intensity, and may disappear in the erect posture. These are usually limited to the recumbent position, disappearing when the patient stands up, while even at the base they are of considerably less intensity, and may disappear in the erect posture. These murmurs are greatly intensified, often becoming loud and rough on forced expiration. On inspiration, however, they become feebler, and when the breath is held after a deep, full inspiration, the murmur usually vanishes. Such murmurs, absent at all other times, may be brought out in a considerable number of individuals by forced expiration. They are common in young