

ed toward the axilla, and sometimes to the angle of the left scapula and often audible also in the second left intercostal space. When due to organic disease of the mitral valve (valvulitis) it is accompanied by accentuation of the pulmonic second sound, by some enlargement of the left ventricle and of the left atrium, and often by signs of mitral stenosis. When not accompanied by signs of mitral stenosis the systolic murmur due to valvulitis may be indistinguishable from the systolic murmur due to relative insufficiency of the mitral orifice from muscular relaxation. In older persons the majority of mitral systolic murmurs are due to relative insufficiency; in younger persons mitral systolic due to valvulitis are very common. Accidental murmurs are often mistaken for the murmur of mitral insufficiency (*vide infra*).

The systolic murmur of stenosis of the pulmonary valve maximal in the second left intercostal space, propagated towards the left clavicle and accompanied by a palpable thrill, is a rare finding. When present, it is usually due to a congenital heart lesion, and but few live to the age of the recruit. A loud harsh systolic murmur in the third left space (Roger's murmur), propagated transversely, but not towards the left clavicle, is heard in congenital defect of the interventricular septum. This condition is so rare as to be of but little interest for military medicine.

The diastolic murmur of insufficiency of the pulmonary valve is also an exceedingly rare finding and need not be discussed.

The diastolic murmur of tricuspid stenosis is also extremely rare.

The systolic murmur of tricuspid insufficiency is usually due to a relative insufficiency depending on muscular relaxation. It is audible in the tricuspid area and is not transmitted to the left of the apex. Other marked signs of circulatory insufficiency are present and the heart is enlarged to the right. Persons presenting this murmur are usually so obviously ill that they are never seriously considered for military service.

B. *Inorganic murmurs (not due to diseased heart valves).*

Of the *inorganic murmurs due to relative insufficiency of valvular closure* (from muscular relaxation), those audible at the mitral and tricuspid orifices are the most common. They have been referred to above in connection with the systolic murmurs due to organic changes in the valves. Occasionally diastolic murmurs due to relative insufficiency of the aortic and pulmonary valves are heard, but they are rare. Though these murmurs of relative insufficiency are spoken of as functional murmurs, they are in my opinion often of graver significance than are some murmurs due to organic valve disease, for they always point to enfeeblement of the myocardium.