through the orifice, to whose margin its segments are attached, or impairs the functions of the valves, so as permit a reflux of blood through the orifice, which they guard.

Sibson* says we are warranted in assuming that in a considerable number of cases the active stage of endocarditis is passing away at the time of the appearance of a murmur. As a general principle, it may be stated that the milder the endocardial inflammation the longer will a murmur be in appearing, and *vice versa*; in many mild cases certainly no murmur ever appears. It is probable that endocarditis may abate with complete removal of the exudative products, leaving no trace of the inflammation. Usually, however, some thickening persists, and, if slight attacks recur, in time the segments become adherent, causing stenosis of the mitral orifice, or, less frequently, probably, incompetence of the valves and regurgitation, on account of the deformity of the valves from shrinkage of the new tissue. I say less frequently, because regurgitation results usually, if not always, from the more acute attacks, while mitral obstruction probably never does.

The first sign of mitral stenosis in about half the cases is a seeming reduplication of the second sound heard at the apex only. The first of these sounds is produced by the blood passing over the tenal mitral valve, which only slightly narrows the orifice as yet; a sound is thus produced which is almost synchronous with the aortic sound and both are heard at the apex only. As the case progresses the presystolic, or rather, at first, the diastolic character of the sound becomes apparent*.

If the lesion lead to incompetence of the mitral valve, the first indication will be a prolongation of the first sound of the heart as heard at the apex. Mitral obstructive murmurs probably always persist, but regurgitant murmurs may disappear. The former are organic, the latter may be functional, being due to adynamia of the cardiamuscle. This adynamia results in imperfect contraction of the mitral orifice during systole and consequent incompetence of the mitral valve. Such murmurs disappear as soon as the heart recovers its tone, but during their existence they are indistinguishable from those of organic origin; in both conditions the heart is likely to be somewhat enlarged. While it is possible for murmurs in rheumatism to be functional, it is best, from a therapeutic point of view, to consider them all organic, and treat the case accordingly. It is worthy of remark that in rheumatism, murmurs occur earlier than do the functional murmurs of any of the other depressing diseases, thus indicating a different origin.

Pericarditis.—For want of space, only a brief reference can be made to this and to myocarditis. There is no cardiac affection, probably, more often overlooked, or whose symptoms are more often misinterpreted than pericarditis. Nothing has mortified one more than to discover in the mortuary a severe pericarditis that was not suspected in the ward. The symptoms are so liable to be masked by those of the primary disease that the possibility of its occurrence should be constantly remembered in those diseases which it often complicates, especially in rheumatism and Bright's disease.

Unlike endocarditis, it is more likely to occur in the first than in subsequent attacks of rheumatism. It is much more apt to occur in severe than in mild cases, and is usually met with from 15 to 25 years of age. It is rare in the young, yet one of the worst cases I have seen was in a child, æt six years, in the practice of my friend, Dr. Byron Field, of this city, last year. The child had a mild attack of rheumatism, the symptoms of which disappeared in a few days, when attendance ceased. Two weeks after the commencement of the rheumatism he was exceedingly pale-faced, exhausted, anxious, pulse very weak and rapid, respirations hurried and labored, so that he required to be propped up on pillows. On examination, the area of præcordial dulness was found slightly enlarged with a somewhat diffused impulse, the sounds were weak and indistinct; the temperature was slightly elevated. Over the præcordial area ill-defined friction could be detected. As was expected, autopsy showed the existence of a very severe pericarditis with abundant fibrinous exudate, and accompanied by a myocarditis affecting the whole cardiac muscle. This case illustrates the condition met with in pericarditis complicated by myocarditis at all ages. Severe, even fatal, cases of pericarditis may show very slight symptoms. Sibson found præcordial pain present in three-fourths of his cases; so that

* Ibid.

* Sansom. Lettsomian Lectures, 1883.