

general convulsions, paralysis, mania, melancholia, etc. Through the nervous system the heart and respiration may be affected as in tachycardia, cheyne-stokes breathing, dyspnœa,

Finally it may be shown in blood changes as chlorosis, anæmia, pernicious anæmia, cachexia, leucæmia.

Arterio-Sclerosis and Heart Failure.

MANY years ago it was noticed, that, under some conditions, the arteries become thickened and less elastic. This in turn gave rise to hypertrophy of the heart. In turn the heart began to fail; and dilatation resulted. This condition was associated with several other diseases and constitutional conditions, notably Bright's disease and gout. For a long time it was argued pro and con whether the arterio-sclerosis, or the renal condition was the first to make its appearance.

During more recent years, a good deal of attention has been devoted to the study of those arterial and cardiac changes that appear to be the necessary accompaniments of advancing age. Here, too, it remained in dispute which portion of the vascular system first showed the evidence of disease.

It seem now to be fairly well settled, that the disease begins in the arterioles, although so eminent a pathologist as Thoma takes the opposite view, and contends the heart first shows signs of disease.

One point must always be borne in mind, that the heart would seldom hypertrophy unless there was some additional work thrown upon it. This goes to prove that the resistance to the blood flow began in the periphery. Further, when the heart has too much work thrown upon it, dilatation and failure is the result. This also happened when the arterio-sclerosis reaches its maximum. For these reasons, and the additional one, that high tension is found prior to any cardiac hypertrophy in many cases, it appears that the weight of evidence is in favor of the view that the change begins first in the vessels.

The causes of these changes have been studied from different stand-points. Some hold that they are the evidences of approaching senility, others that they are caused by diathetic conditions such as uric acid in the blood. At the present moment, both opinions are ably advocated; and there seems to be good grounds for thinking that both are true of certain cases. In some cases, the changes in the arteries, and the subsequent ones in the heart, are the natural results of increasing age. In others, it would appear as if the cause was such as is found in gout and rheumatism, namely, uric acid, and its soda compounds.