

one animal to another, in which he showed that under tension it degenerated much more rapidly than when buried in a relaxed state. Following up this experimental work he tried to see what would be the effect of compressing the aorta of a rabbit for 3 or 4 minutes every day extending over a long period of time. Blood pressure tracings showed that such a compression pushed the blood pressure up almost as high as a dose of adrenalin.

He found as a result that in about 100 days the animals showed a most extensive media degeneration and calcification extending from the point of compression up the whole aorta to the heart. This was very even in its distribution and much more marked than in the adrenalin animals, and he concludes, and I think rightly, that in all these experiments with pressure-increasing drugs, the high pressure is an important factor.

All these experiments, however, although producing a disease comparable to the Mönkeberg type of sclerosis of the arteries of the extremities in man did not produce a condition in any way comparable to the endarterial changes in the human aorta.

Later on, other workers have been successful here, not however with pressure-increasing drugs, but with microbic toxins. The first to succeed with this were several French experimenters.

Afterwards Klotz of Montreal succeeded by the use of Typhoid B.; and Stuplocow, and quite recently Stolnykow, has by the use of continued injections of staphylococcus aureus succeeded in producing in the rabbits' aorta small intimal plaques in every way similar to the plaques which one meets with in man.

These are the results of the most recent experimental work upon arterial degeneration. What conclusions can we draw from them? I think the following are warranted: First, that high tension is an essential factor in the production of arteriosclerosis. Where this alone acts, as in the arteries of the extremities of laboring men, we get the pure medial type. Second, that toxic influences, very frequently microbic, but probably also metabolic, are important factors. Again I think that experimental work has clearly shown that it does not require continued high tension to produce arterial degeneration, that it may equally well be produced by repeated excesses of tension acting for a short time over a long period. The importance of this for the daily activities of the modern individual is self-evident.

I have said nothing about the influence of alcohol in the production of this disease. My own view is that it is of slight importance. I should place tobacco as a much more serious factor in its production, both as the result of clinical experience and experimental studies. Hyper-alimentation probably is much more important than alcohol.