

remain to represent the vessel buried in this experiment. These show marked fibrillation and granular degeneration, and the elastic structure as a whole, shows a decrease in volume. A reaction to the specific dyes is obtained, though there is no indication of elacin. In this experiment only a moderate amount of tension was exerted.

EXPERIMENT 18.—*Aorta after thirty-five days.* In this experiment a great deal of tension was exerted upon the vessel wall. Upon sectioning and staining, there is found to remain only a very small quantity of elastic tissue. The remains are fibrillated and granular and take the elective stains fairly well but exhibit no signs of elacin.

EXPERIMENT 19.—*Aorta after fifty days.* The degree of tension exerted about equalled that in the preceding experiment. There is absolutely no trace of elastic tissue to be found.

In studying the impregnation of elastic fibres by certain salts, it was found, as the result of the reactions given below, that calcium phosphate, principally, but also a small quantity of chloride were present. Klotz, by the use of Sudan III, demonstrated the formation of soaps preceding calcareous deposition. This test, however, was not applied to the tissues in my experiments.

For the demonstration of calcium, sections of the tissue were treated with a freshly made solution of hæmatoxylin (one fourth per cent.) in distilled water; while for phosphates and chlorides the reactions described by Professor A. B. Macallum and Schmorl's modification of von Kossa's test were used. In separation of chlorides from phosphates, the reagent used was that of Schmorl (three per cent. silver nitrate in distilled water plus one and a half per cent. nitric acid). Since silver phosphate is soluble in dilute nitric acid while the chloride is not, any subsequent darkening upon exposure of the sections to light indicated the presence of silver chloride.

From the study of the specimens described above, the following conclusions are, I believe warrantable:

1. Elastic tissue offers a very marked resistance to degenerative processes; this is especially noticeable when the changes which it undergoes are compared with those occurring in other tissues under similar conditions.
2. The power of resistance is lowered, apparently, when this tissue is placed under tension.
3. Degeneration of elastic fibres, when not influenced by ten-