

APPENDIX.

There are some fundamental truths in the science of physiology which the student best appreciates when he sees the actual experiments from which they are deduced. There can be no doubt that actual laboratory work for each student is the ideal to strive for in the teaching of physiology, but limited time allotted to the subject and the expense which such a laboratory incurs prohibit the general adoption of the method in most dental schools. The authors have found the following experiments to be of value in their dental classes, since they increase the interest of the student in the more important facts of the circulation, respiration, and secretion. They are given as demonstrations before small sections of the class.

The following outlines are not intended to give complete directions for the experiments, but to explain the various steps of the experiments to the individual students. Full laboratory directions for all the experiments are found in Professor G. N. Stewart's *Manual of Physiology* (Longmans, Green, & Co., 1914).

DEMONSTRATION No. 1.

A. The Circulation of Blood in the Vessels of the Tadpole's Tail.

A tadpole, whose brain has been destroyed by a needle is laid on a glass slide and a large cover-glass is placed over the tail, which is then examined by the low power lens of a microscope. The general characters of the flow of blood through the vessels can be seen (p. 179).

B. The Nature of the Cardiac Contraction.

The brain of a turtle is destroyed by a sharp blow on the head. The ventral portion of the earapace is removed by a saw cut along each side and by dissecting it from the tissues, care being taken to avoid hæmorrhage. The heart, beating inside the pericardial sac, is seen posterior and dorsal to the pectoral arch. By tying the fore-limbs firmly above the head, the pectoral girdle is pulled apart and more space is obtained for the observation of the heart. The pericardial sac is incised and the auricles and ventricle exposed. The auricles appear as two thin-walled sacs above and to each side of the ventricle. If the tip of the ventricle be raised the sinus venosus is brought into view. It receives the superior and inferior vena cava, and joins the right auricle.