

human red cells, but not in human as compared with animals'. That is the method which has been used for estimating the resistance of red cells in physiological work.

As a matter of fact this instrument is further valuable because it enables you to find out the exact variation of volume of red corpuscles before and after sudden procedures, such as the injection of toxine into animals. The volume may be taken before and after the experiment. It can be applied in any similar experiment with human beings, to find out the changes in the volume of red cells; *e.g.*, before and after ether anaesthesia.

Another use for the apparatus is the estimation of the osmotic pressure of the blood serum. That is done by taking a known quantity of blood and mixing it with a certain volume of normal saline and adding successively drops of water until you get a fluid, which, when mixed with the red cells, causes haemolysis to occur. The concentration of the fluid is known before and after, so that all the data required for calculation are to hand.

A.D. BLACKADER, M.D.—I confess I would like to know under just what conditions we could make use of this test.

O. C. GRUNER, M.D.—The words "practical application" does not, in this case, refer to everyday clinical work, but to the use which can be made of it in studying red cells under different conditions. So far, it has simply been used in learning the changes in the blood of fevers and anaemias, and various general diseases. It has here brought out the result that resistance is diminished in fevers and anaemias, and led to the discovery of the relation of these changes to those in the actual chemical composition of the blood. In some diseases the difference in amount of carbon dioxide in the blood causes differences in the resistance. The application to *everyday* clinical work is not yet perfected, but it is useful for special work in connexion with blood examinations.

WM. GARDNER, M.D.—Dr. Gruner spoke of a difference or reaction in blood corpuscles from the human and from animals; I would like to know if this difference is marked.

O. C. GRUNER, M.D.—The difference between the resistance of human red cells and that of animals is not so characteristic as to be of use for medico-legal purposes, for instance.

BLOOD PRESSURE: Demonstration of various forms of apparatus.

JOHN McCRAE, M.D.—Significance in clinical medicine.

E. W. ARCHIBALD, M.D.—Significance in clinical surgery.

W. S. MORROW, M.D.—Remarks.