content can be gained from determinations of hemoglobin, hematocrit and red blood cell count. Operative and postoperative complications and fatalities might be reduced if blood volume deficits were recognized and corrected. Routine blood volume determinations in hospital laboratories is not a formidable procedure. (*Williams, W. T., and Parsons, W. H.: Indications for Blood Volume Determinations in Major Surgical Procedures, Surg. Gynec. & Obst. 106: 435 (April) 1958.*)

SHOCK Using the isolated intestine, the author showed the presence of renin in the blood of the majority of animals after blood loss; renin was not detected after blood loss in the blood of animals whose kidneys had been removed. After removal of the kidneys the animals tolerated blood loss badly, showing weak compensation as compared with control animals. In compensation for blood loss the author attaches definite importance to a hypertensive factor of renal nature and calls the factor renin; nevertheless he stresses that he has not solved the problem of the nature of this substance. (*Brusilovs-Kaya, D. A.: Role of Kidneys in Compensatory Reactions of Body to Blood Loss, Arkh. Pat. 18: 76, 1956.*)

GAS PERFUSION Rabbit heart and cat tibialis muscle were maintained in good condition and in an active state for 3 to 4 hours by the intravascular perfusion of these tissues with warm, moist oxygen containing 5 per cent carbon dioxide. A pressure of 120 mm. of mercury was used to displace fluid from the blood vessels. Once gas had made its way into the veins the supply pressure was maintained at 80 mm. of mercury. (*Burns, B. D., Robson, J. G., and Smith, G. K.: Survival of Mammalian Tissues Perfused with Intravascular Gas Mixtures of Oxygen and Carbon Dioxide, Canad. J. Biochem. & Physiol. 36: 499 (May) 1958.*)

FETAL ELECTROCARDIOGRAPHY Fetal electrocardiographic tracings using the abdominal leads only do not permit identification of the ST segment and T wave deflection. When abdominal, paired with intrauterine leads were used, more information was obtained permitting interpretation of fetal tracings as related to fetal distress. Further evaluation and standardization of uncomplicated fetal electrocardiographic tracings are needed. (*Kaplan, S., and Tojama, S.: Fetal Electrocardiography, Obst. & Gynec. 11: 391 (April) 1958.*)

FETAL LIFE Employing a Grass 8-channel electroencephalograph, abdominal leads, lumbosacral leads and two arm leads, the author has recorded the fetal electrocardiogram in order to determine fetal life. The method has proved of value as early as the eighteenth week. This method will also be useful in determining the relationship between increased intracranial pressure and maternal anesthesia to fetal anoxia. (*Miller, M. L., and others: Determination of Fetal Life by Electrocardiography, Obst. & Gynec. 11: 398 (April) 1958.*)

HEMODYNAMICS Seven dogs were prepared with an arteriovenous fistula between the femoral artery and vein. The size of the fistula was regulated by a screw clamp on the large Tygon tube connecting the above vessels. When the clamp was open cardiac output increased from 16 to 130 per cent. Mean arterial blood pressure remained unchanged or decreased 10–32 mm. of mercury. Coronary sinus blood flow and cardiac work increased with all fistulae. Effect on the heart rate was variable. There was an increase in the cardiac oxygen consumption. The increase of the coronary blood flow was due to a decrease in the resistance of the coronary bed. (*Wegria, W., and others: Effect of Arteriovenous Fistula on Mean Arterial Blood Pressure, Coronary Blood Flow, Cardiac Output, Oxygen Consumption, Work and Efficiency, Am. J. Physiol. 193: 147 (April) 1958.*)

ETHER Ballistocardiograms showed evidence of myocardial depression by ether in 4 healthy, anesthetized, young male volunteers. (*Malt, R.: Depressant Effect of Ether on Heart, Am. Heart J. 55: 582 (April) 1958.*)

OPEN HEART OPERATIONS Hematologic studies in 12 consecutive patients

who underwent open heart operations with extracorporeal circulation disclosed the following changes in the postoperative period: mild anemia, minimal hemolysis of erythrocytes, leukocytosis, "atypical" lymphocytes, slight reticulocytosis and minimal prolongation of the prothrombin time. (*Battle, J. D. and Hewlett, J. S.: Hematologic Changes Observed After Extracorporeal Circulation During Open Heart Operations, Cleveland Clinic Quart. 25: 112 (April) 1958.*)

CARDIAC PACEMAKER To undertake open heart operations without a pacemaker at hand no longer seems justifiable. The electrodes should be placed on the heart of any patient in whom atrioventricular block occurs during the operation, even though the ventricular rate appears satisfactory at the time. The pacemaker should be used in children whose ventricular rates fall below 90, and in adults whose rates drop below 80. (*Olmsted, F., Kolff, W. J., and Effler, D. B.: Electronic Cardiac Pacemaker After Open Heart Operations, Cleveland Clinic Quart. 25: 81 (April) 1958.*)

PULMONARY COMPLICATIONS Temporary overloading of the pulmonary circulation is the most important single factor in the initiation of capillary damage that marks the beginning of severe pulmonary complications after open heart operations. Overloading may occur by forward overfilling, through collateral vessels and by retrograde overfilling. Other possible factors are pre-existing pulmonary vascular disease, oxygen intoxication of alveolar and capillary cells and exsiccation of the lungs. (*Kolff, W. J., and others: Pulmonary Complications of Open Heart Operations: Their Pathogenesis and Avoidance, Cleveland Clinic Quart. 25: 65 (April) 1958.*)

OPEN HEART SURGERY Extracorporeal circulation and hypothermia were used for open heart surgery in a series of 46 patients. Low flow extracorporeal circulation and hypothermia have proven to be complementary for open heart surgery. This procedure is supported by the high venous oxygen saturation and the minor alteration in the lactic acid levels in the blood during perfusion. Difficulties in temperature control have been solved by the use of a heat exchanger in the extracorporeal system. Cardiac irritability has not been a serious problem. (*Sealy, W. C., Brown, I. W., and Young, W. G., Jr.: Report on Use of Both Extracorporeal Circulation and Hypothermia for Open Heart Surgery, Ann. Surg. 147: 603 (May) 1958.*)

OPEN HEART MORTALITY With the use of extracorporeal circulation techniques, the mortality rate is now well under 5 per cent in the less serious cardiac defects. DeWall achieved a rate of 2.5 per cent in 40 consecutive cases; Spencer reports thirteen consecutive aortic commissurotomies with no mortality; Lillehei reports a mortality rate of 8 per cent in the last 25 consecutive patients undergoing complete correction of tetralogy of Fallot. (*Heimbecker, R. O.: Heart-Lung Machine in Open Heart Surgery, Canad. M. A. J. 78: 531 (April 1) 1958.*)

AORTIC VALVE SURGERY Two techniques for aortic valve surgery under direct exposure have been devised in dogs. Both utilize a pump-oxygenator which returns blood to the femoral artery while the aorta is clamped two inches distal to the aortic valve. To maintain myocardial integrity in one method, oxygenated blood is perfused through the coronary system in a retrograde fashion after inserting a cannula into the coronary sinus. The second method utilizes the induction of cardiac standstill with potassium to prevent myocardial damage. Both methods permit restoration of normal unsupported circulation in most instances. (*State, D., and others: Direct Visualization of Aortic Valve in Dogs, West. J. Surg. 66: 29 (March–April) 1958.*)

MYOCARDIAL CONTRACTILITY The effect of cardiac bypass with potassium induced arrest and right ventriculotomy was investigated in fourteen dogs and ten patients. Direct measurements of myocardial contractility in these studies showed that the heart was still capable of doing the same amount of work following re-