Certain minor advantages such as freedom from the danger of air embolus at the time of transfusion was abolished. The post-transfusion survival of red cells was not improved by storage in plastic bags. (*Dudley, H. A. F., and others: Plastic Bags for Storing and Transfusing Blood, Lancet 1: 294 (Feb. 8) 1958.*)

DEXTRAN It has been found that extracts and homogenates of spleen are capable of splitting dextran; this proves the possibility of enzymatic splitting of dextran in the animal body. Prepared protein fractions from liver, kidneys, lung, brain, and muscle possessed also enzymatic activity against dextran, but were slightly different from each other. The most active preparations are obtained from spleen and liver, then from kidneys, lung, and muscle. The enzyme is absent from blood. Chromatographic examination showed that the only product of dextran breakdown is glucose. The obtained breakdown of dextran with production of glucose indicates that the precipitated protein fraction is capable of disrupting the 1:6-glucoside bond of the dextran molecule. (*Rozenfeld, E. L., and Lukomskaya, I. S.: Splitting of 1,6-Bonds of Dextran by Animal Tissue, Biokhimiia 21: 412 1956.*)

POLYCYTHEMIA An increase in hematocrit reading from 40 to 60 per cent was achieved by repeated transfusions in a volunteer. Minute volume and oxygen consumption during exercise decreased when air and 14 per cent oxygen was being breathed, but not for 100 per cent oxygen breathing. The classical concepts of carotid and aortic chemoreceptor activation are not adequate to explain this ventilatory effect of polycythemia. (*Hornbein, T. F., and Roos, A.: Effect of Polycythemia on Respiration, J. Appl. Physiol. 12: 86 (Jan.) 1958.*)

IRREVERSIBLE SHOCK Recent experimental work related to the importance of the liver in shock is summarized. The liver is not of great importance in the early phases of hypovolemic shock but gains in significance with diminution of oxygen supply to the tissues. The liver does not share in the protective reflexes of the body and the anoxia that results leads to significant metabolic alterations. Experimental work suggests that death from shock can be prevented by increasing the circulation of oxygenated blood through the liver. (*Erskine, J. M.: Relation of Liver to Shock, International Abstracts of Surgery (S. G. & O.) 106: 207 (Mar.) 1958.*)

VENTRICULAR FIBRILLATION Many factors which may and probably do play a part in the production of ventricular fibrillation during hypothermia are discussed. Prolongation of the refractory period and differences in the refractory period in various parts of the ventricular musculature due to temperature gradients in the muscle set the stage for ventricular fibrillation. Other causative factors may include: Changes in blood *p*H, myocardial calcium-potassium imbalance, mechanical stimuli, overactivity of cardiac sympathetic nerves, increased amounts of catechol amines, insufficient coronary flow, and anesthetic agents and other drugs. (*Badeer, H.: Ventricular Fibrillation in Hypothermia. A Review of Factors Favoring Fibrillation in Hypothermia With and Without Cardiac Surgery, J. Thoracic Surg. 35: 265 (Feb.) 1958.*)

HEART BLOCK The acute effects of heart block on the cardiac output and systemic and pulmonary blood pressure of the dog have been investigated. The left atrial pressure increased promptly, but returned to normal within an hour. There was a prompt and sustained fall in cardiac output, heart rate and peripheral blood pressure. (*Mowlem, A., and Campbell, G. S.: Acute Effects of Complete Heart Block on Pulmonary Circulation, Surg. Gynec. & Obst. 106: 333 (Mar.) 1958.*)

REOPERATION AFTER CARDIAC ARREST Between 1949 and 1956, 28 patients had 42 operations after successful cardiac resuscitation. Death occurred in only one patient of this series. The anesthetic agents used or the method utilized appeared to have little bearing on the outcome of the operation. Skill in management appeared to be the factor of paramount importance. (*Howland, W. S., and*

other: Reoperation After Resuscitation from Cardiac Arrest, Surg. Gynec. & Obst. 106: 207 (Feb.) 1958.)

COOPERATION In attempting to avoid cardiac arrest the surgeon can cooperate with the anesthetist in many ways. He can avoid hurrying the induction of anesthesia because haste leads to rapid administration of agents and rough manipulations. He can see that ventilation is not hindered by tight dressings or casts, leaning on the patient's chest, allowing the accumulation of instruments or supplies on the patient's chest, or using large packs or retractors in the upper abdomen. He will not insist on positions of the patient which are unfavorable to the safe conduct of the anesthesia. He can avoid air leaks while closing a bronchus by use of "cut and sew" technique. He should not urge a hasty or premature removal of the patient from the operating room at the end of the operation. *(Keeley, J. L., Schairer, A. E., and Carroll, J. P.: Cardiac Arrest in Surgical Patients, S. Clin. North America 38: 55 (Feb.) 1958.)*

EXPERIMENTAL HEART The transplanted heart of warm-blooded animals is able to function in another's organism from 30–40 minutes onwards, up to 30 days, dying off gradually, depending on the magnitude of the biochemical differences with the recipient's organism. The author points out that the animal with two hearts, the "humoral" and the "neurohumoral," could serve as an excellent object for a comparative analysis of the central and peripheral actions of the cardiac drugs. To solve successfully the problem of homotransplantation in warm-blooded animals it is necessary to consider the positive influence of the central nervous system and of the environment as established in the experiments on the cold-blooded animals. *(Sinitsyn, N. P.: Experimental Transplantation of Heart, Vestn. Khir. 7: 28, 1956.)*

CLINICAL "BYPASS" PROBLEMS The problem of pulmonary hypertension is serious as there are many patients whose hearts can be repaired but whose pulmonary vessels cannot. Despite the useful concept of the high-resistance with high flow reserve and the high-resistance with low flow reserve lungs, pulmonary biopsy does not give a good basis for deciding operability. In ventricular septal defects if the shunt is small because of right ventricular hypertension and pulmonary vascular changes, surgical treatment is hazardous and the results unpredictable. Any patient who has or has had heart failure or has atrial fibrillation receives full doses of digitalis preoperatively. Mortality, criteria for cure and use of the artificial pacemaker are discussed. This article is a must for anyone interested in this field. *(Burchell, H.: Clinical Problems Related to Surgical Repair of Intracardiac Defects with Aid of Extracorporeal Pump-Oxygenator, Circulation 16: 976 (Dec.) 1957.)*

HEART-LUNG MACHINE The machine is composed of an arterial pump, an oxygenator, a pump for suction of coronary sinus blood. The arterial pump produces a pulsating type of flow, is able to deliver an output close to the normal cardiac output and causes very little hemolysis of the blood. The oxygenator is a rotating cylinder limited by an artificial membrane; inside this cylinder an aerosol of saline is injected in which oxygen is dissolved; outside the cylinder is the blood which becomes oxygenated by diffusion through the membrane of the oxygen dissolved in the aerosol. The whole oxygenator is sterilized with ozone for one hour; three liters of blood are necessary to prime the apparatus for large cardiac outputs. It has been used successfully in man for intracardiac surgery. *(Thomas, J. A.: Heart-Lung Machine with Membrane Oxygenator, C. rend. Acad. Sc. 246: 1081 (Feb.) 1958.)*

SYMPATHETIC NEUROHORMONE Sympathetic nerves and ganglia incubated with tyrosine or dopa synthesized hydroxytyramine and norepinephrine but only questionable amounts of epinephrine. The neurohormone of sympathetic nerves is norepinephrine. Epinephrine, if present, is of questionable importance. *(Goodall, Mc.C., and Kirshner, N.: Biosynthesis of*