BURN SHOCK Studies reveal that cardiac output decreases precipitously after burn and is restored with blood volume expansion. After severe burns in patients, pulmonary edema may develop—most likely due to myocardial injury revealed upon pathological examination. The use of digoxin and restoration of blood volume are necessary to increase cardiac output to normal or to prevent its fall after moderate to severe burns. (*Fozzard, H. A.: Myocardial Injury in Burn Shock, Ann. Surg. 154: 113 (July) 1961.*)

BLOOD LOSS Changes in total red cell volume and blood volume were studied by the use of a radioactive chromium technique in 16 patients undergoing radical surgery for cancer. Blood loss at operation was measured by the automatic conductivity bridge technique. Fifteen to 42 per cent of the blood loss at operation was contained on the drapes and surgical gowns. Fifteen of the 16 patients were anemic by blood volume standards the fourteenth postoperative day. The hematocrit was an unreliable guide in assessing changes in the patient's blood volume. After radical operations, the insidious loss of red blood cells in the postoperative period may equal the operative loss. (*Hoye, R. C., Ketcham, A. S., and Berlin, N. I.: Total Red Cell Volume Changes Associated with Extensive Surgery, Surg. Gynec. Obstet. 112: 697 (June) 1961.*)

BLOOD PRESERVATION The three major problems associated with the preservation of whole blood are anticoagulation, surfaces, and storage temperature. Acid-citrate-dextrose is still the most widely used anticoagulant-preservative solution. There appears to be little danger from the use of the citrate ion as an anticoagulant except under unusual circumstances. Silicone coating and plastic containers possibly present less damaging surfaces to whole blood. Newer methods of storage of whole blood include the addition of a nucleotide, adenosine, in order to lengthen the period of erythrocyte survival. In addition, storage at temperatures below −79 C. has permitted almost indefinite survival of red blood cells. (*Ballinger, W. F., and Cohn, H. E.: Preservation of Whole Blood, Int. Abstr. Surg. 112: 411 (May) 1961.*)

BANK BLOOD TOXICITY The depressant effect of banked blood, stored with ACD solution, on the isolated dog heart has been studied. As blood is infused, the depressant effect is evidenced by a decrease in cardiac rate and a negative inotropic effect with final cardiac standstill. This effect is initially seen at *p*H of 7.1 to 7.2 with standstill occurring at *p*H 6.8 to 7.0. Calcium alone will not correct this. Buffering of the blood with THAM to a normal range will result in improvement and, in the presence of a normal calcium level, will restore normal cardiac function. (*Baue, A. E., Hermann, G., and Shaw, R. S.: Study of Bank Blood Toxicity, Surg. Gynec. Obstet. 113: 40 (July) 1961.*)

HYPOTHERMIA Studies of circulation, including ballistocardiography, were performed on 17 subjects before and during induced hypothermia (37 to 30 C.) using either barbiturate or ether or Fluothane anesthesia. Ether and Fluothane produced optimal circulatory conditions. With barbiturates, it was necessary to produce ganglionic blockade in order to achieve a similar status of circulation. Blocking of the muscular component of the thermic counterregulation by curare was insufficient. (*Klensch, H., Goett, U., and Felderhoff, B.: Analysis of Circulation during Induced Hypothermia, Der Anaesthesist 10: 161 (June) 1961.*)

HYPOTHERMIA In the management of critically ill patients, either highly febrile or facing prolonged surgical procedures, hypothermia is used to increase chances for survival. Hypothermia produces numerous effects beneficial to these patients: reduction of oxygen requirements, inhibition of harmful enzymatic activity, reduction in amount of anesthesia required, reduction of cardiac work load, diminution of tissue metabolism, production of hypotension, and inhibition of shock reactions. The surface cooling method of producing hypothermia is used because of its simplicity. Allowing the temperature to go no lower than 32 C. and providing constant electrocardiographic monitoring virtually eliminates the threat of ventricular fibrillation. (*Comar, I., and Farris, J. M.: Hypothermia in*