stimulation, and increased cardiac output; (c) respiratory obstruction, which increases intrathoracic pressure and elevates venous pressure; (d) anesthetics such as cyclopropane and ether, which increase the blood levels of catecholamines; (e) deep anesthesia, which causes myocardial depression and elevated venous pressure; (f) improper body position, which, if the operative site is low, increases blood hydrostatic pressure; and (g) inadequate analgesia with the central perception of pain causing peripheral circulatory stimulation. An anesthetic should be administered with knowledge of these potentials and attempts made to control each in order to minimize bleeding. Automatically, there are three sets of veins draining blood from the brain: the internal jugular veins, the emissary veins, and the vertebral plexus. It seems reasonable to believe that the jugular veins are not always the principal avenue of escape of blood from the brain. The vertebral plexus may contribute significantly and may be important in providing the means for circulatory compensation with change of posture and during deliberate hypotension in the head-up position. This provides a vascular channel of considerable capacity that in the head-up position continually keeps vascular resistance low and facilitates the flow of blood through the brain. *(Eckenhoff, J. E.: Circulatory Control in the Surgical Patient, Ann. Roy. Coll. Surg. Eng. 39: 67 (Aug.) 1966.)*

PROLONGED BED REST Five healthy adult males were studied during a 30 day bed rest experiment. Repeated tilt table tests were conducted before and after the period of recumbancy. Radioisotope blood volume determinations were made prior to, during and after the study. Results indicate that cardiovascular deconditioning occurs after 30 days of bed rest and that two weeks of ambulation is required for reconditioning. Also, blood volume decreases during the first few days of bed rest and returns toward normal at the end of the 30 day rest period. *(Vogt, F. B., and others: Tilt Table Response and Blood Volume Changes Associated with Thirty Days of Recumbency: Aerospace Med. 37: 771 (Aug.) 1966.)*

INSULIN AND PHENYLEPHERINE Cardiovascular and metabolic responses to l-phenylepherine and dl-isoproterenol were studied in acutely pancreatectomized dogs. dl-phenylepherine, in a dosage of 10 micrograms per kilogram, was significantly less effective in increasing myocardial contractile force, systolic pressure and blood glucose levels and in decreasing the heart rate in the study dogs than in the controls. Infusion of 2 micrograms per kilogram of insulin returned the responses toward normal. Recent evidence (Patel, *et al.*, J. Pharmacol. 149: 199, 1965) indicates that part of the cardiovascular actions of phenylepherine is due to release of endogenous catechol amines from intracellular stores. It is postulated that insulin is necessary for release of these stores probably by altering the membrane permeability to phenylepherine. Pancreatectomy did not alter the response to dl-isoproterenol. *(Goldberg, E., and Rosenblum, F.: Reduction in Cardiovascular and Metabolic Responses to Phenylepherine in Acutely Pancreatectomized Dogs, Amer. Heart J. 72: 482 (Oct.) 1966.)*

SICKLING Precision scale models of sickle-cell hemoglobin molecules indicate that the genetic substitution of valine for glutamic acid at the sixth position in the two beta chains allows an intramolecular hydrophobic bond to form. This changes the conformation in such a way as to allow molecular stacking. Optical rotatory dispersion studies and the results of subjection of Hb S solution to temperature change and to propane are consistent with the presence of such a bond. Examination of sickled erythrocytes in a magnetic field and in polarized light indicates that the Hb S molecules are aligned *in situ*. Filaments interpreted are hollow cables of six Hb S microfilaments have been demonstrated by electron microscopy. *(Murayama, M.: Molecular Mechanism of Red Cell "Sickling," Science 153: 145 (July) 1966.)*

BANK BLOOD Blood conserved in ACD solution was subjected to gas analysis and measurements of pH and oxyhemoglobin dissociation. The values were correlated with those obtained on fresh blood and blood con-