return of excess interstitial fluid as to the cardiac lesion itself, which initially increased the production of lymph. Increased return of lymph to the left heart in patients with isolated right heart lesions might relieve consequences of venous hypertension and perhaps increase left heart output. (*Cole, W. R., and others: Thoracic Duct-to-Pulmonary Vein Shunt in the Treatment of Experimental Right Heart Failure, Circulation 36: 539 (Oct.) 1967.*)

PULMONARY CIRCULATION At moderately high lung volumes, the distribution of pulmonary blood flow in both the human and isolated dog lung can be explained by the relations between pulmonary arterial, alveolar and venous pressures. Employing a radioactive xenon and lung scanning technique in normal man in the upright position, it was found that blood flow increased over almost the whole vertical distance down the lung at total lung capacity. However, there was often a small area of higher vascular resistance in the most dependent zone. There was invariably a larger region of reduced blood flow near the base at functional residual capacity. At F.R.C., blood flow per alveolus usually decreased over the lower third of the lung, reaching two-thirds of its maximum value at the base. At residual volume, blood flow per alveolus commonly decreased from top to bottom of the lung. Similar patterns were found in the isolated dog lung where the effects of changing lung volume and of vasoconstrictor and vasodilator drugs showed that the increased vascular resistance was caused by pulmonary vessels outside the influence of alveolar pressure. These results suggest that any general increase in interstitial pressure in the human lung will affect the distribution of blood flow and pulmonary vascular resistance. (*Glazier, J. B., and others: Role of Interstitial Pressure in the Distribution of Pulmonary Blood Flow, J. Physiol. 190: 23 (May) 1967.*)

PULMONARY EDEMA The average rate of water accumulation in healthy dog lungs varied in a nonlinear way with the level of capillary hydrostatic-plasma colloid osmotic pressure difference, and was unaffected by the level of capillary hydrostatic pressure. At low levels of left artrial pressure minus plasma colloid osmotic pressure, water accumulated in the lung at an average rate of 0.09 ml./gm. of dry lung per hour per mm. Hg pressure difference. At higher levels the average rate of accumulation was 0.22 ml./gm. per hour per mm. Hg pressure difference. In most experiments water accumulated in the lungs slowly during the first 30 minutes of the test period, and more rapidly as the period was extended. Obstruction of right lymphatic duct outflow did not alter the rate of water accumulation. In the present experiments, pericapillary pressures were estimated to be of the order of −9 mm. Hg and the filtration coefficient for the pulmonary capillaries is estimated to be of the order of one-tenth to one-twentieth that for canine muscle capillaries. These data indicate that edema formation in lung tissue cannot be defined solely in terms of intravascular forces, but may be governed to a significant degree by changes in pericapillary forces in the pulmonary interstitium. (*Levine, O. R., and others: The Application of Starling's Law of Capillary Exchange to the Lungs, J. Clin. Invest. 46: 934 (June) 1967.*)

PULMONARY EDEMA Using a double isotope dilution technique, pulmonary extravascular fluid volume (PEV) was measured in normal subjects and in patients with valvular heart disease. PEV, in normals, mitral valve disease, and aortic valve disease was 107, 193, and 154 ml./m.^{2}, respectively. PEV correlates closely with mean pulmonary arterial pressure, mean left atrial pressure and functional classification, whereas there is little relation between PEV and cardiac output or pulmonary vascular resistance. (*McCredie, Michael: Measurement of Pulmonary Edema in Valvular Heart Disease, Circulation 36: 381 (Sept.) 1967.*)

AIR EMBOLISM Pulmonary air embolism occurred during insertion of a transvenous pacemaker in an 88-year-old woman. In reviewing the literature, it is felt that immediate therapy consists of placing the patient in the left lateral decubitus position, administering oxygen and vasopressors. More vigorous therapy includes closed-chest cardiac massage, aspiration of air from the heart and hyperbaric oxygenation. The pathophysiology of venous air embolism is such that a large bolus of air

passes into and becomes impacted in the pulmonary arteries and capillaries rather than obstructing flow at the right ventricular outflow tract. Placing the patient in the left lateral decubitus position displaces the air to the apex of the ventricle and allows it to be churned up with blood, reaching the lungs at a much slower rate. (*Zeft, H. J., and others: Pulmonary Air Embolism During Insertion of a Permanent Transvenous Cardiac Pacemaker, Circulation 36: 456 (Sept.) 1967.*)

EEG AND CEREBRAL BLOOD FLOW Eight-channel electroencephalogram monitoring during carotid endarterectomy performed in conscious patients under cervical-block anesthesia provides an accurate evaluation of cerebral blood flow. This method allows the selection of patients in whom an internal shunt should be used. It determines the length of the safe period available to the surgeon for insertion of the shunt and the proper size of the shunt to be used. EEG readings vary with the depth of general anesthesia. Possibly 75 per cent of the sensitivity is decreased by moderate general anesthesia. (*Harris, E. J., and others: Continuous Electroencephalographic Monitoring During Carotid Artery Endarterectomy, Surgery 62: 411 (Sept.) 1967.*)

CHEMORECEPTORS The activity in carotid body chemoreceptor afferent fibers has a rhythm with the same periodicity as respiration. This rhythm is not due to arterial pressure changes with respiration or to cyclical changes in pulmonary venous admixture. Rather, it is caused by changes in blood gas tensions during each respiratory cycle. The rhythm is modified by changes in respiratory frequency and volume. Fluctuations of arterial oxygen tension which have the same periodicity as respiration are shown to be conducted up the vertebral artery at least as far as the vertebro-occipital anastomosis. It is proposed that the chemoreceptor rhythm reflects the moment-to-moment changes in blood gas tensions. (*Biscoe, T. J., and Purves, M. J.: Observations on the Rhythmic Variation in the Cat Carotid Body Chemoreceptor Activity Which Has the Same Period as Respiration, J. Physiol. 190: 389 (June) 1967.*)

CHEMORECEPTORS Parallel recordings of cervical sympathetic and carotid body chemoreceptor activity have been made in the anesthetized cat. Sympathetic activity remains remarkably constant while chemoreceptor activity is varied by changes in arterial blood gas tensions. Changes in intrathoracic pressure by obstruction of the airway or thoracic compression were associated with changes in the activity of both nerves. It is likely that under normal conditions sympathetic nervous activity provides a stable vasomotor tone within the carotid body. (*Biscoe, J. T., and Purves, M. J.: Observations on Carotid Body Chemoreceptor Activity and Cervical Sympathetic Discharge in the Cat, J. Physiol. 190: 413 (June) 1967.*)

ELECTROANESTHESIA AND CIRCULATION Cardiovascular reflexes in dogs were compared under electrical, pentobarbital and methoxyflurane anesthesia. Blood pressure dose-response curves were obtained using acetylcholine, epinephrine, and histamine before, during and after hemorrhage. Resting blood pressure was highest with electroanesthesia, intermediate with pentobarbital and lowest with methoxyflurane. Before transfusion, response to acetylcholine was greater in the dogs anesthetized with pentobarbital as compared with electroanesthesia. The response to epinephrine was greater in the methoxyflurane-treated dogs than in those anesthetized with either pentobarbital or electroanesthesia. There was no significant difference in the response to histamine with the various types of anesthesia. (*Moss, C. M.: Electroanesthesia: Comparison of its Cardiovascular Effects to Those of Pentobarbital and Methoxyflurane, Bull. Tulane Med. Fac. 26: 226 (Aug.) 1967.*)

SHOCK Early septic shock in patients who were normovolemic before bacteremia produced a syndrome characterized by hyperventilation, respiratory alkalosis, a high cardiac index, low peripheral resistance, high central venous pressure, elevated blood volume, hypotension, oliguria, warm and dry extremities, and arterial blood lactate accumulation. During serious illnesses cardiac outputs even two or three times normal may be necessary to provide adequate tissue blood flow. Hyper-