defibrillate with 130 volts at 1/10 to ¼ second duration compared to 230 volts at 1/10 to ¼ second duration. However, there were more burns and they were more severe when 230 volts at ¼ second were applied to the heart. (*Kaiser, G., and others: Ventricular Fibrillation: Experimental Study Comparing Various Voltages and Durations of Electric Shock in Defibrillation of the Canine Heart, J. Thoracic Surg. 33: 537 (April) 1957.*)

EXTERNAL PACEMAKER A stimulating electrode was placed in the esophagus of 16 patients without premedication or anesthesia and 10 patients under anesthesia. With pacemaker stimuli of 50 volts, pulse duration of 20 milliseconds and frequency of about 80 per minute, there was a good correlation between frequency of the heart beat and the pacemaker. Afterward 3 of the anesthetized patients complained of a dull ache in the chest which subsided in 72 hours. (*Shafiroff, B. G. P., and Linder, J.: Effects of External Electrical Pacemaker Stimuli on Human Heart, J. Thoracic Surg. 33: 544 (April) 1957.*)

CATECHOL AMINES Plasma concentrations of epinephrine and norepinephrine were determined in dogs before, during, and after anesthetization with various general anesthetics. The fluorometric method of Weil-Malherbe and Bone was used for estimation of catechol amines. Ether, chloroform, and divinyl ether increased the levels of both amines. During thiopental anesthesia, amine concentrations were not significantly different from conscious controls. The contractile force of the heart was related directly to the blood level of catechol amines. (*Richardson, J. A., Woods, E. F., and Richardson, A. K.: Plasma Concentrations of Epinephrine and Norepinephrine During Anesthesia, J. Pharmacol. & Exper. Therap. 119: 378 (March) 1957.*)

MUSCLE IONS The view may be rationally entertained that in the original development of the cell the smaller size of the hydrated potassium ion as compared with the hydrated sodium ion allowed a considerable reduction of permeability, and hence of the energy required for electrolyte extrusion, while at the same time securing a free entrance of potassium ions to balance the surplus negative charges on the nondiffusible constituents. But it would appear necessary for the cell to possess an active mechanism for sodium ion extrusion as sodium ions could not be indefinitely excluded. With the occurrence of a high intracellular concentration of potassium ions, enzymatic facilitations of various kinds might well occur as secondary processes. (*Conway, E. J.: Nature and Significance of Concentration Relations of Potassium and Sodium Ions in Skeletal Muscle, Physiol Rev. 37: 84 (Jan.) 1957.*)

GERIATRIC ANESTHESIA Risk in the geriatric patient is increased by the loss of elasticity in the respiratory, cardiovascular, cerebral and renal systems. When regional anesthesia is not feasible, safe anesthesia in the geriatric patient means light planes of general anesthesia. One of the greatest errors prevalent in current anesthesia is the employment of deep planes of narcosis when these are not required. Spinal anesthesia and the judicious use of muscle relaxants drugs accompanied by the maintenance of effective alveolar ventilation is indicated. (*Stephen, C. R.: Choice of Anesthesia for Geriatric Patients, Ann. New York Acad. Sc. 66: 879 (April) 1957.*)

TRANSFUSION REACTION Reaction of a type mediated by endogenous histamine liberation has been observed in dogs given intradermal injections of plasma from other dogs, not previously sensitized. This phenomenon has been observed in humans and may be a factor in unexplained transfusion reactions of the "allergic type." (*Bliss, J. Q., and Stewart, P. P.: Selective Response of Skin to Autologous and Non-autologous Plasma in Non-sensitized Subjects, Canad. M. A. J. 76: 847 (May 15) 1957.*)

CARIOVASCULAR DISEASE The incidence of death (0.05–0.08 per cent) in patients with and without cardiovascular disease receiving electric shock therapy shows no significant difference providing no acute process exists (myocardial infarction, thrombophlebitis). (*Brody, J. I., and Bellett, S.: Use of Electric Shock Therapy*

in Patients with Cardiovascular Disease, Am. J. Med. Sc. 233: 40 (Jan.) 1957.)

CARDIAC MASSAGE The anatomic changes produced by cardiac massage in 60 patients are described and categorized. Massage can result in injury to any or all portions of the cardiac tissues. Gross laceration of the heart occurred in 10 per cent. Cardiac injuries from massage are technical errors and are not due to duration of massage. Successful massage can exceed one hour without significant cardiac damage resulting. *(Adelson, L.: Clinicopathologic Study of Anatomic Changes in Heart Resulting from Cardiac Massage, Surg. Gynec. & Obst. 104: 513 (May) 1957.)*

CORONARY ANGIOGRAPHY A mixture of 90 per cent Hypaque, 25 per cent potassium citrate and saline was injected proximal to an occlusion of the ascending aorta. This made it possible to simultaneously arrest the heart and to obtain a coronary angiogram. The combination of drugs caused no apparent damage to the myocardium even though it remained in the heart during periods of cardiac arrest exceeding one hour. *(Miller, E. W., and Kolff, W. J.: Angiography of Coronary Arteries in Dogs, Cleveland Clinic Quarterly 24: 123 (April) 1957.)*

CARDIAC ARREST Potassium chloride seemed to be as effective as potassium citrate in producing cardiac arrest, thus the potassium ion is responsible for this effect. Citrate without potassium sometimes produced ventricular fibrillation probably as a result of the binding of calcium. An unusual type of 2:1 atrioventricular block was found when sodium citrate so prolonged Q–T intervals that alternate P waves occurred before repolarization of the ventricular myocardium was completed. *(Kolff, W. J., and others: Demonstration of Role of Potassium and Citrate Ions Under Conditions of Elective Cardiac Arrest for Open-Heart Operation, Cleveland Clin. Quart. 24: 128 (April) 1957.)*

CARDIAC ARREST Seven cases of cardiac arrest under trichloroethylene anesthesia were reviewed. The employment of alternate agents whenever possible is recommended. *(Norris, W., and Stuart, P.: Cardiac Arrest During Trichloroethylene Anesthesia, Brit. M. J. 1: 860 (April 13) 1957.)*

CARDIAC ARREST The records of 8 patients who had cardiac arrest during anesthesia were studied. All had thoracotomy and cardiac massage. Four survived to leave the hospital perfectly well. All had multiple drugs and sedatives. Cardiac arrest is believed to result from (1) hypoxia with starvation of myocardium; (2) administration of drugs or anesthetics that poison the heart; or, (3) a combination of these. *(Sharpe, G. P., Whitaker, H. T., and Parson, W. H.: Clinical Problem of Acute Circulatory Failure, Surg. Gynec. & Obst. 104: 535 (May) 1957.)*

HEART BLOCK Heart block treated with sodium lactate may go on to more serious arrhythmia. Of 12 patients given 0.5 or 1.0 *M* sodium lactate, 6 developed ventricular tachycardia on 10 occasions. The magnitude of increase of the heart rate suggests that the uptake and utilization of the lactate by the myocardium promotes myocardial alkalosis and altered irritability. Molar sodium lactate is less efficacious and more hazardous than isopropylnorepinephrine in treating this condition. *(Murray, J. F., and Boger, S. H.: Ventricular Arrhythmias After Intravenous Sodium Lactate in Heart Block, Circulation 15: 547 (April) 1957.)*

DIPIPANONE Dipipanone, which is the piperidino analogue of methadone, has been used for 18 months as a supplement in anesthesia for general surgical operations, thoracic operations and as an analgesic for relief of pain in labor with a minimum of undesirable side effects. *(Coleman, D. J., and others: Dipipanone Hydrochloride as an Adjunct to Anesthesia in Obstetrics and Surgery, Brit. M. J. 1: 1092 (May 11) 1957.)*

BUTHALITONE The usual nitrous oxide, oxygen and trichloroethylene anesthesia for short cases in the outpatient department was replaced by the use of Buthalitone sodium (10 per cent solution-11 mg. per kg. of body weight) with the