depletion of norepinephrine stores of the heart on the response of the heart rate to stimulation of the accelerans nerve. Pre-treatment with two doses of reserpine (each 0.1 mg./kg. intraperitoneally) sensitizes the heart to the positive chronotropic action of norepinephrine and reduces the response to stimulation of the accelerans nerve. Ganglionic transmission remains unaffected. The results indicate that the presence of certain stores of peripheral sympathetic transmitter is essential for the production of tachycardia by stimulation of the accelerans nerve. (*Trendelenburg, V., and Gravenstine, J. S.: Effect of Reserpine Pretreatment on Stimulation of the Accelerans Nerve of the Dog, Science 128: 901 (Oct. 17) 1958.*)

MIDBRAIN POTENTIALS The effects of chlorpromazine and pentobarbital on evoked potentials in the midbrain reticular formation were investigated in 23 cats. The potentials recorded oscillographically in the reticular formation were evoked by stimulation of the sciatic nerve. Chlorpromazine enhanced the amplitude of single evoked fast and slow potentials, and markedly slowed the rate of recovery of both of these potentials. Pentobarbital on the other hand decreased the amplitude of single evoked potentials, and increased the "absolute" refractory period and slowed the rate of recovery from the "fast" potential. Chlorpromazine may act selectively by depressing the frequency response of neurones responsible for the "slow" potential recorded in the medial reticular formation. (*DeMaar, E. W. J., and others: The Effects of Chlorpromazine II: The Effects of Chlorpromazine on Evoked Potentials in the Midbrain Reticular Formation, J. Pharmacol. & Exper. Therap. 124: 77 (Sept.) 1958.*)

EXTRACORPOREAL CIRCULATION A rotating drum film type oxygenator is described wherein filming takes place on a disposable sheet of corrugated polyethylene which is sterilized by boiling. The remainder of the apparatus is fabricated from stainless steel and is sterilized in the autoclave. The arterial blood is filtered by gravity flow through a fine mesh nylon fabric before leaving the oxygenator. Oxygen and carbon dioxide removal was excellent for the flows studied in 10 dogs. The capacity of the oxygenator exceeded the flow rates that were employed in the animal experiments. (*Schimert, G., and others: A Rotating Drum Film Oxygenator, Surg. Gynec. & Obst. 107: 527 (Nov.) 1958.*)

EXTRACORPOREAL CIRCULATION The bubble dispersion oxygenator and the stationary screen oxygenator were compared under experimental and clinical conditions. Experiments were conducted in 65 dogs and clinical experience was gained over a two year period in 94 patients. Experimental data indicated that the screen oxygenator had some advantages over the bubble oxygenator in that it reduced the possibility of microscopic air embolism. However, clinical experience indicated that factors other than the type of oxygenator employed were of major importance. The excellent clinical results obtained by the bubble oxygenator demonstrated the device capable of providing satisfactory extracorporeal circulation. Current preference for the screen oxygenator is due in part to the fact that a progressive increase in experimental mortality occurred with prolonged duration of bypass with the bubble oxygenator. (*Maloney, J. V., Jr., and others: An Experimental and Clinical Comparison of the Bubble Dispersion and Stationary Screen Pump Oxygenators, Surg. Gynec. & Obst. 107: 577 (Nov.) 1958.*)

EXTRACORPOREAL CIRCULATION Use of extracorporeal circulation for more than one to two hours has been successful only in few cases, one of the important time limiting factors being the effects on the formed elements of blood and on certain labile plasma proteins. Despite clean, smooth non-wetting surfaces, certain obstructions for recording oxygen tension, *p*H and temperature present opportunities for trauma to blood. Coagulation defects and excessive bleeding are the major problems encountered. Possible causes are (1) incomplete neutralization of heparin (2) loss of platelets (3) activation of fibrinolysins (4) loss of denaturization of some clotting element, (5) coagulation activated by trauma, (6) activation of some circulating anticoagulant, (7) loss of capillary tone. Proper maintenance of minimal blood dilution, near

normal *p*H, normal electrolyte pattern (particularly ionizable calcium) have been facilitated by an improved anticoagulant mixture containing sodium edathamil, sodium gluconate, glucose and magnesium chloride. (*Brown, I. W., Jr., and Smith, W. W.: Hematologic Problems Associated with the Use of Extracorporeal Circulation for Cardiovascular Surgery, Annals Int. Med. 49: 1035 (Nov.) 1958.*)

BY-PASS During intracardiac surgery utilizing a by-pass technique, oxygen tension was measured with a Clark platinum cathode oxygen electrode. The patient was monitored with a glass electrode and a calomel reference electrode. During perfusion arterial oxygen tension was maintained between 400 and 600 mm. of mercury. The mean *p*H for 30 patients was 7.42 ± 0.04. Changes in blood gas solubilities with changes in blood, body and organ temperatures are discussed. (*Clark, L. C., and others: Monitor and Control of Blood Oxygen Tension and pH During Total Body Perfusion, J. Thoracic Surg. 36: 488 (Oct.) 1958.*)

ACCIDENTAL HYPOTHERMIA Accidental hypothermia has recently been diagnosed nine times in elderly patients in circumstances which suggest that it is much commoner than is generally supposed. Six of the patients were admitted to the hospital within two winter months. Seven had rectal temperatures between 30.2 C. and 24.25 C. The electrocardiogram of seven of the eight cases demonstrated a pattern considered pathognomonic of hypothermia. In the eighth case, the typical features were masked by bundle branch block. Typically, the PR, QRS and QT intervals were lengthened. A conspicuous extra deflection appeared at the junction of the QRS complex and the ST segment. In some leads, the base of QRS was widened. The T wave might be inverted. It is important to recognize the clinical picture of hypothermia, because it may disguise that of underlying conditions and thus delay full diagnosis and adequate treatment. (*Emslie-Smith, D.: Accidental Hypothermia, A Common Condition with a Pathognomonic Electrocardiogram, Lancet 2: 492 (Sept. 6) 1958.*)

HYPOTHERMIA When hypothermia was induced prior to five hours of occlusion of the superior mesenteric artery in dogs, only 5 of 16 died; without hypothermia, all in a series of 18 dogs expired in 18 hours. Similar results occured with the use of hypothermia in dogs after a four hour occlusion of the common mesenteric vein. Death was apparently due to local tissue damage followed by intraluminal and intraperitoneal blood and fluid loss. While hypothermia protects against local tissue damage, it is of no help once the damage (fluid loss) is done. Cooling and rewarming appears to be safer when accomplished by the "slow" blanket method as compared to the more rapid immersion method. (*Medins, G., and Laufman, H.: Hypothermia in Mesenteric Arterial and Venous Occlusions—Experimental Study, Ann. Surg. 148: 747 (Nov.) 1958.*)

HYPOTHERMIA The anti-shock value (in presence of severe burns) of artificial hibernation, hypothermia, neuroplegia produced by lytic mixture and of the orthodox therapy (blood substitutes, glucose, sodium bromide, vitamins) were comparatively and experimentally studied on 55 dogs. It was found that development of shock was not prevented (and therefore life not prolonged) by the use of deep hypothermia (28 C.) combined with administration of blood substitute, glucose, vitamins and sodium bromide within 5–7 hours after the burning. Development of shock was also not prevented by prolonged artificial hibernation (induced by means of a lytic cocktail consisting of chlorpromazine, pethidine, diphenhydramine, procaine and small amounts of sodium pentothal) combined with physical cooling down to 35–32 C. and with intravenous administration of blood substitutes, glucose and vitamins. On the other hand treatment consisting of blood transfusion, blood substitutes administration, and administration of aminopeptide-2, vitamins, glucose, sodium bromide, lytic mixture and sodium pentothal prevented the development of shock in the great majority of animals and was instrumental in prolongation of life for 4–7 days. Results were even better if lytic mixture and sodium pentothal were omitted. Large amounts of neuroplegic and narcotic drugs should have, therefore, no place in treatment of severe