

a positive-negative phase ventilator. The aim was to establish a respiratory alkalosis of pH 7.5 and  $P_{CO_2}$  of 30. This was accomplished with a respiratory rate of 18–20 per minute and a respiratory minute volume of 15–20 liters in adults, and with a respiratory rate of 20–25 per minute and a respiratory minute volume of 10–15 liters in children. Arterial pH,  $P_{CO_2}$  and  $P_{O_2}$  were checked at twenty minutes after the onset of hyperventilation, after opening of the thorax, ten minutes after heparinization, off bypass, before extubation, after return of consciousness, and after each occurrence that might have produced a fall in pH. At times twenty to thirty minutes of initial hyperventilation had produced pH values of 7.65. A small fall of the hydrogen ion concentration usually occurred with the opening of the chest. After removal of the clamps under hypothermia an average decrease of the pH to 7.35 was noted; with cardiopulmonary bypass the fall was less (pH 7.45). Arterial  $P_{CO_2}$  changes paralleled and preceded pH changes. Arterial  $P_{O_2}$  values below 120 mm. of mercury were not observed. Postoperative pulmonary edema was not seen. (Bahuet, R., and Ploquin, F.: *Notre Expérience de l'Anesthésie et de la Ventilation Artificielle en Chirurgie à Coeur Ouvert*, *Anesth. Analg.* (Par.) 17: 9 (Jan.-Feb.) 1960.)

**CARDIAC METABOLISM** Myocardial metabolism was studied during extracorporeal circulation. An increased coronary blood flow occurred. There was an increase in the utilization of oxygen, lactate and pyruvate. The metabolic changes occurred early in the perfusion, and prolongation of perfusion beyond 30 minutes had little additional effect. (Wallace, H., Rheinlander, H., and Sugarman, H.: *Cardiac Metabolism During Extracorporeal Circulation*, *A. M. A. Arch. Surg.* 82: 138 (Jan.) 1961.)

**MYOCARDIAL ACIDOSIS** The force of ventricular contraction was measured in animals. Acidosis was produced by infusing lactic acid or reducing body perfusion. During acidosis there was decrease of myocardial contractility and arterial pressure; there was decreased response to injection of vasopres-

sors. Patients in terminal shock also have metabolic acidosis. In both animals and man, acidosis can be corrected by the use of THAM and sodium bicarbonate. Response to vasopressor drugs then improves. (Thrower, W., Darby, T., and Aldinger, E.: *Acid-Base Derangements and Myocardial Contractility*, *A. M. A. Arch. Surg.* 82: 56 (Jan.) 1961.)

**CARDIAC ARREST** Filling the arrested heart with blood from the patient's elevated limbs can restart beating. The method is effective provided cardiac arrest has been immediately recognized and no more than 15 seconds are spent in the maneuver. Three case histories are reported, in each of which the pulse became imperceptible. In one there was no bleeding when a skin incision was made. In all three the patients' legs were held vertically. Within 15 seconds a pulse returned. All 3 patients recovered, in one a gastroectomy was completed, and in another an axillary dissection was performed four days later. (Woodward, W. W.: *Cardiac Arrest Treated by Elevation of Limbs for Fifteen Seconds*, *Lancet* 2: 1120 (Nov. 19) 1960.)

**ECG BY TELEPHONE** A simple telecardiographic system is designed which consists of a transmitter and a receiver. The transmitter produces a carrier wave which is modulated by the patient's heart beat. This results in a sound, the frequency of which varies with the voltage variations of the heart. A telephone placed close to the transmitter in the hospital or laboratory allows the sound to pass over the wires to a receiver in the doctor's office which converts the frequency variations back into voltage variations and there activate a receiving electrocardiograph. No direct wire connections between transmitter and telephone or telephone and receiver are necessary. (Winsor, T., Sibley, A. E., and Fisher, E. K.: *Electrocardiogram via Telephone*, *Western Medicine* 1: 10 (Dec.) 1960.)

**HEMORRHAGE** Factors which influence hemodilution following hemorrhage were studied. When animals rapidly lost 35 per cent of their blood volume, there was immediate severe hypotension, and hemodilution occurred rapidly. When blood was removed