using extracorporeal circulation, oxygenation during the procedure did not depend upon the lungs. The tumor was located close to the carina and was large enough to cause almost complete obstruction. Marlex mesh was used to reconstruct the trachea, and a tracheostomy was performed for postoperative protection of the airway. (*Adkins, P. C.: Resection of Tracheal Cylindroma Using Cardiopulmonary Bypass, Arch. Surg. 88: 405 (Mar.) 1964.*)

TRACHEOSTOMY An improved cuffed tracheostomy tube which is inflated intermittently by the IPPB machine is made by placing multiple holes in the side of the tracheal tube. A thin cuff covers all the side holes. The pressure produced by the cuff on the trachea is never more than that produced by the IPPB machine and is thus equal to that in the remainder of the tracheobronchial tree and only occurs during inspiration. (*Martinez, H. E.: Improved Cuffer Tracheostomy Tube for Use with Intermittent Positive Pressure Breathing, J. Thor. Cardiov. Surg. 47: 404 (Mar.) 1964.*)

OXYGEN CONSUMPTION Oxygen consumption and carbon dioxide ouput were measured in five human subjects cooled for 80 to 210 minutes. Two subjects were normal, one had been almost completely paralyzed below the neck by poliomyelitis and two were unconscious for long periods of time as a result of intracranial damage and were observed with and without paralyzing doses of muscle relaxants. When normal and unconscious subjects receiving no drugs were cooled, oxygen consumption and carbon dioxide output rose. This was usually accompanied by pilo-erection and sporadic shivering. Skin temperatures fell to 24 and 26° C., while deep temperature rose slightly. When subjects paralyzed by disease or drugs were cooled, oxygen consumption and carbon dioxide output were not increased. An increase in oxygen uptake and carbon dioxide output occurred when men with active skeletal muscles were cooled. This did not occur in men whose muscles were paralyzed. In man the increase in metabolism on cooling for periods up to three and one-half hours occurs solely in skeletal muscle. (*Johnson, R. H., Smith, A. C., and Spalding, J. M. K.: Oxygen Consumption of Paralyzed Men Exposed to Cold, J. Physiol. 169: 584 (Dec.) 1963.*)

HYPOTHERMIA Selective cardiac hypothermia in animals during 40 minutes of ischemia was followed by a prompt and effective recovery of myocardial contractility as judged by maintenance of normal arterial and venous pressures, and the response to a brief pressure-work load. In contrast, hearts subjected to potassium arrest or ischemia alone either failed to recover or showed poor recovery. The following findings were common to all types of myocardial ischemia: (a) adenosine-triphosphate and adenosinediphosphate were reduced and declined further in the recovery period; (b) phosphocreatine decreased and rose to above control levels during recovery and (c) inorganic phosphate showed reciprocal changes to those of phosphocreatine. There were no statistically significant differences between control and experimental groups with respect to the changes in the adenine nucleotides, phosphocreatine, or inorganic phosphate. (*Beine, R. M., and others: Evaluation of Selective Cardiac Hypothermia and Potassium Arrest of the Heart, J. Thor. Cardiov. Surg. 47: 283 (Mar.) 1964.*)

HYPOTHERMIA No metabolic acidosis occurred during profound cooling of the circulation of animals to body temperature of 15° C. or during rewarming when the perfusion rate was adequate and the same blood group was used in the artificial circulating system. When blood substitutes were used a metabolic acidosis resulted from a reduction in the buffering power of the blood by the substitute material. Substitutes can be used if appropriate amounts of sodium bicarbonate are added. Tissue oxygenation and metabolite transport by the blood was maintained. (*Schlosser, V., and Grote, G.: Blood Gases and Acid-Base Metabolism With the use of Blood and Blood Substitutes in Artificial Circulation During Hypothermia, Surgery 55: 440 (Mar.) 1964.*)

HYPOTHERMIA From determination of the lactate-pyruvate ratio in dogs during cardio-