though the respiratory acidosis remained at its maximum (P_{CO_2} 600 mm., *p*H 6.55). When given sodium bicarbonate several animals survived this extreme acidosis without signs of any organic damage. (*Bücherl, E. S., and Prondzynski, B.: Hemodynamic Changes in Experimental Respiratory Acidosis and After Partial Correction by Infusions of Sodium Bicarbonate Solutions, Klin. Wschr. 42: 421 (May 1) 1964.*)

HYPERVENTILATION Overly efficient use of mechanical ventilation with resultant respiratory alkalosis may lead to hypokalemia and an exaggeration of the toxic effects of digitalis. The relative importance of the alkalosis per se, the decrease in serum potassium, changes in ionized calcium, or other electrolyte changes in initiating these adverse cardiac effects are not fully clarified. Measures should be taken to monitor the arterial *p*H and electrolytes more carefully in patients undergoing prolonged hyperventilation. (*Flemma, R. J., and Young, W. G.: Metabolic Effects of Mechanical Ventilation and Respiratory Alkalosis in Postoperative Patients, Surgery 56: 36 (July) 1964.*)

ARTIFICIAL RESPIRATION Values of relative ventilation and perfusion of both lungs during artificial respiration with intermittent positive pressure in the supine position were found similar to those during spontaneous respiration. When the animal was placed on one side, however, spontaneous and artificial respiration resulted in varying distribution of the inspired air while perfusion was not definitely affected. A similar disturbance of distribution was found after thoracotomy, but carbon dioxide excretion was unchanged. Neither arterial P_{CO_2} nor *p*H changed when the respiratory minute volume remained normal. In the lateral position the upper lung excreted more carbon dioxide than the lower one because the ventilation/perfusion ratio deviated in favor of ventilation. After thoracotomy volume/pressure ratio increased even more for the upper lung resulting in an increased carbon dioxide excretion. Thus the uneven distribution was not sufficient to interfere with the total pulmonary carbon dioxide excretion. Cardiac output was reduced during thoracotomy. (*Rehder, K.: Effect of Position and Thoracotomy on the Distribution of Blood and Gas in the Dog Lung During Artificial Ventilation with Intermittent Positive Pressure, Thoraxchirurgie 11: 570 (April) 1964.*)

HYPERBARIC OXYGEN Influence of increased inspired P_{O_2} upon steady state ventilatory response to elevated inspired P_{CO_2} was studied in 6 normal men. With subjects resting supine in a hyperbaric chamber at 3 atmospheres pressure, carbon dioxide in oxygen or in oxygen-nitrogen mixture was administered to obtain the relation between end-tidal P_{CO_2} and ventilation. At a control P_{O_2} of about 120 mm. of mercury, the slope of the respiratory response to carbon dioxide averaged 3.38 liters/minutes/mm. of mercury. At alveolar P_{O_2} levels of 700, 1,500 and 2,200 mm. of mercury, the average respiratory, responses to carbon dioxide were 2.45, 2.33 and 1.63 liters/minute/mm. of mercury, respectively. The effect of oxygen was sufficient to lower the respiratory response to carbon dioxide to less than 50 per cent of normal. This depression was not uniform among subjects, nor smoothly progressive in relation to P_{O_2}. The mechanism and sites involved in the gross depressant effect of hyperoxia are not yet certain. (*Dickson, J., and Bornmann, R.: Degree of Depression of Respiratory Reactivity to Carbon Dioxide in Man by 1.0, 2.0 and 3.0 Atmospheres Inspired pO_2, Fed. Proc. 23: 279 (March–April) 1964.*)

ATELECTASIS Response to acute pulmonary atelectasis was studied in 14 lightly anesthesized dogs breathing spontaneously with chest wall intact. Portions of lung were made atelectatic by endobronchial occlusion. Acute atelectasis produced a two- to four-fold increase in respiratory minute volume, a decrease in intrathoracic pressure, and an initial fall in pulmonary arterial pressure usually followed by a slight rise. Proportion of cardiac output shunted during acute atelectasis was greater than the percentage of lung tissue collapse. In contrast, unilateral ventilation with 100 per cent nitrogen or 92.5 per cent nitrogen and 7.5 per cent carbon dioxide reduced the amount of blood flow through the affected area. Except for a variation in the time of response, there