discomfort about 15 minutes after the injection. No influence on the blood pressure and pulse rate was observed. (*Yamashita, H.: Ambenonium Chloride (WIN8077) as a Tubocurarine Antagonist (Japanese), Jap. J. Anesth. 13: 283, 1964.*)

NERVE CONDUCTION Conduction velocity in rat nerves was evaluated after alloxan injection or pancreatectomy. When a diabetic state was induced, a reduction of conduction velocity of approximately 30 per cent was noted in both sensory and motor fibers of the sciatic nerve. No slowing was observed in vagus nerve fibers. Nondiabetic alloxanized animals and starved rats showed no reduction in sciatic nerve conduction rates. Insulin treatment of the diabetic rats or addition of insulin to the *in vitro* preparation did not affect the reduced conduction velocity. (*Eliasson, S. F.: Nerve Conduction Changes in Experimental Diabetes, J. Clin. Invest. 43: 2533 (Dec.) 1964.*)

HYPOTHERMIA Prolonged ether anesthesia may cause definite damage to the liver, even if protection from cold stress seems to be complete. The damage is characterized by granulo-vacuolar degeneration of the liver cells, often leading to necrosis, fatty degeneration predominant in the marginal region of the lobule and complete disappearance of glycogen granules. Adequate blocking of autonomic homeostatic mechanism of the body by the use of blocking agents and mild room air cooling were found to be best for protecting the liver. (*Nagayami, K.: Histochemical and Electron Microscopic Changes in Dog Liver Following Induced Long-Term Hypothermia (Japanese), Far East J. Anesth. 4: 1 (1964.).*

RESPIRATORY ALKALOSIS After respiratory alkalosis in dogs, P_{CO_2} decreased to 5.6 mm. of mercury, serum bicarbonate fell to 6 mEq. per liter and *p*H rose to 7.7. Serum potassium level fell from 4.4 to 3.0 mEq. per liter. Phosphorus decreased from 2.7 to 2 mEq. per liter. Lactic acid rose from 5 to 8 mEq. per liter. Electrocardiographic changes were not constant, and seemed to depend more on the magnitude of potassium change than upon absolute levels. Hyperventilation of digitalized patients may be dangerous. (*Murray, W., Andersen, M. W., and William-Olsson, G.: Biochemical and Electrocardiagraphic Effects of Hypocarbia, Arch. Surg. 90: 290 (Feb.) 1965.*)

VENTILATION-PERFUSION Employing a helium technique, rate of disappearance of inert gas during washout was followed simultaneously in alveolar gas and in arterial blood. Relative perfusion of the hypoventilated (slow) compartment was calculated and its ventilation-perfusion ratio was compared to the alveolar ventilation-perfusion ratio of the total respiratory system. In five normal subjects, the slow compartment received 1.8 per cent of total ventilation and 2.3 per cent of lung perfusion and had an alveolar ventilation-perfusion ratio 81 per cent of the total ratio. By comparison, study of an emphysematous subject showed that 10 per cent of alveolar ventilation was distributed to the slow compartment. The technique requires only one analytical method and is therefore applicable on a large scale. (*Klocke, R. A., and Farhi, L. E.: Simple Method for Determination of Perfusion and Ventilation-Perfusion Ratio of the Underventilated Elements (the Slow Compartment) of the Lung, J. Clin. Invest. 43: 2227 (Dec.) 1964.*)

PULMONARY COMPLICATIONS Preoperative pulmonary function, intracardiac pressures and degree of dyspnea were related to the incidence of postoperative respiratory insufficiency in 102 adult patients who underwent cardiac surgery. The purpose was to seek a reliable method of prognosticating the risk of postoperative respiratory insufficiency, especially after the use of cardiopulmonary bypass. When the heart-lung pump was used, 24 of 30 patients with a preoperative vital capacity less than 80 per cent of the predicted normal developed respiratory insufficiency, whereas only eight of 41 patients with a normal vital capacity had this complication. In 26 patients where the preoperative vital capacity and gas diffusion were both normal, only three developed postoperative respiratory insufficiency. Other single or combined pulmonary function abnormalities, including tests of the mechanics of breathing, were of no great value in predicting the postoperative course. The degree of dyspnea and the level of intracardiac pressures, although sometimes helpful, were often misleading. *(Ariza-Mendoza, F., and Woolf, C.: Value of Pulmonary Function Studies in the Assessment of Patients for Cardiac Surgery, Canad. Med. Ass. J. 91: 1250 (Dec. 12) 1964.)*

CYSTIC FIBROSIS The difference in alveolar and arterial nitrogen tensions in normal children is similar to that of normal adults. The difference is moderately increased in interstitial lung disease, while in cystic fibrosis it is markedly increased indicating ventilation-perfusion derangments comparable to those found in severe obstructive emphysema in adults. *(Waring, W. W.: Ventilation-Blood Flow Relationships in the Lungs of Children, Amer. Rev. Resp. Dis. 91: 77 (Jan.) 1965.)*

ATELECTASIS Following obstruction of a bronchus of an air-filled lung, radiologic evidence of atelectasis develops in 5 to 24 hours. If the lung is filled with oxygen, massive collapse may occur in one hour. Clinical signs occur earlier than radiologic signs, and treatment should not be delayed for radiologic evidence. Postanesthetic ventilation should be carried out with air rather than oxygen. *(Lansing, A. M.: Radiological Changes in Pulmonary Atelectasis, Arch. Surg. 90: 52 (Feb.) 1965.)*

ASTHMA Distribution of the pulmonary circulation was studied in 4 normal children and 9 children suffering from asthma. Perfusion of the underventilated compartment of the lungs was less than 2 per cent of the total in normals and as high as 12 per cent in the asthma patients. This was more than the ventilation fraction to this compartment, which therefore had a relatively low alveolar ventilation-perfusion ratio. In patients with more severe forms of asthma, there were perfused but virtually unventilated compartments. Even patients who had been free of symptoms for as long as nine months did not show a readjustment in perfusion of this slow compartment that would restore its ventilation-perfusion ratio to normal values. *(Ledbetter, M. K., Bruck, E., and Farhi, L. E.: Perfusion of the Underventilated Compartment of the Lungs in Asthmatic Children, J. Clin. Invest. 43: 2233 (Dec.) 1964).*

AEROSOL PARTICLES Deposition of aerosol in the human respiratory tract was calculated as a function of the particle size and particle density of the aerosol, the manner of breathing and various parameters which control the degree of mixing of inspired air with the dead space air and with lung air. The computations were performed on an electronic computer, which allowed a full analysis of the effects of the various parameters. Agreement between the computed deposition curves and published experimental data was very satisfactory. Particles above 0.3 microns predominately settle and impact on walls of the respiratory system where sharp changes in direction occur. For unit density particles, most of the deposition of particles 0.3 and 1 microns occurs in the alveoli and terminal bronchi. Tidal volume has only a small effect on the position of the maximum in the alveolar deposition curve between 0.3 and 6 microns but does have considerable influence on the value of this maximum deposition. *(Beeckmans, J. M.: Deposition of Aerosols in the Respiratory Tract, Canad. J. Physiol. Pharmacol. 43: 157 (Jan.) 1965.)*

HUMIDITY Temperature of inspired air in the larynx is 32.3° C., of expired air 36.4°. Humidity of both inspired and expired air is 96 to 99 per cent. With mouth breathing, temperature of inspired air is 30.5° C. and of expired air 36.2°, humidity is 90 and 99 per cent, respectively. If the surrounding temperature is 0 to − 4° C. laryngeal temperature is about 0.6° C. less. Humidity is unchanged. Responsible for maintaining the intrapulmonary humidity of 45 mm. water is the layer of water molecules in the upper respiratory passages and the trachea. Loss of water is about 10 per cent greater in mouth breathing or tracheostomy breathing. Humidity of 90 per cent at 25° C. in the form of mist atomized by air is best suited for nose and tracheostomy breathing. The inspired mist is rapidly vaporized in the upper respiratory passages. High relative humidity is more important than temperature. The "arti-