rate and tidal volume. However, no remarkable change in intrapulmonary distribution of inspired gas occurred when respiratory pattern or inspiratory flow rate was changed passively during artificial ventilation or IPPB. It is possible that the lung is subjected to different stress patterns during active ventilation and passive filling of the lung. (*Young, A. C., Martin, C. J., and Hashimoto, T.: Can the Distribution of Inspired Gas be Altered?, J. Appl. Physiol. 24: 129 (Feb.) 1968.*)

ABSTRACTOR'S NOTE: This is further evidence that inspiratory flow rate and respiratory pattern are not important determinants of intrapulmonary distribution of inspired gas during anesthesia and artificial ventilation.

BLOOD GASES IN ASTHMA Arterial O_2 and CO_2 tensions, *p*H and forced expiratory volumes were measured in 101 asthmatic patients during acute attacks of bronchospasm. Hypoxemia in 91 of the subjects was found to be caused by an alteration in ventilation–perfusion ratios. In some patients with very severe airway obstruction, alveolar hypoventilation and increased venous blood admixture were found to contribute to the hypoxemia. Hypocarbia and respiratory alkalosis were present in 73 patients. CO_2 retention occurred only at extreme degrees of obstruction. Age, history and asthma, and duration of the acute attack were unrelated to the alterations in blood gas tensions, *p*H or severity of airway obstruction. (*McFadden, E. R., Jr., and Lyons, H. A.: Arterial-blood Gas Tensions in Asthma, New Engl. J. Med. 278: 1027 (May) 1968.*)

PULMONARY FUNCTION Correlations between spirometric studies and studies of pulmonary mechanics were made with 20 asthmatic and 15 emphysematous patients as subjects. In emphysema, a significant correlation was found between the one-second forced expiraotry volume and expiratory airway resistance and expiratory resistive work. In asthmatic subjects, the forced expiratory volume was related to lung compliance, the sum of elastic and expiratory resistive work. The vital capacity was also found to be related to lung compliance. (*Lynne-Davies, P., and others: Comparative Studies of Lung Function in Airway Obstruction, Amer. Rev. Resp. Dis. 97: 610 (April) 1968.*)

BAGASSE WORKER'S LUNG Seven patients who developed bagasse worker's lung were found to have a severe restrictive lung defect. Measurements of pulmonary function showed reductions in total lung capacity, inspiratory capacity, vital capacity, forced expiratory volume, transfer coefficient of the lung for carbon monoxide, and membrane-diffusing capacity. These changes took more than a year to return toward normal. (*Pierce, A. K., and others: Pulmonary Function in Bagasse Worker's Lung Disease, Amer. Rev. Resp. Dis. 97: 561 (April) 1968.*)

CHEMOTHERAPY IN BRONCHITIS The effect of prophylactic oxytetracycline was studied in 27 patients with early chronic bronchitis, most of whom remained under surveillance for five to six years. The number of exacerbations and the isolation rate of sputum pathogens was significantly reduced in the patients receiving prophylactic chemotherapy. Chemoprophylaxis, however, did not affect the rate of deterioration in ventilatory function. (*Calder, M. A., Lutz, W., and Schonell, M. E.: A Five Year Study of Bacteriology and Prophylactic Chemotherapy in Patients with Chronic Bronchitis, Brit. J. Dis. Chest 62: 93 (April) 1968.*)

LUNG LAVAGE A 42-year-old woman with alveolar proteinosis had normal lung mechanics but a Pa_{O_2} of 42 mm Hg and a low diffusing capacity. Traditional therapy with nebulized acetylcysteine, heparin and pancreatic dornase was of no benefit. The patient was anesthetized with thiopental and intubated with a Carlens tube. While ventilation of the right lung with 100 per cent oxygen was carried out, the left lung was degassed, followed by filling with a saline, heparin, acetylcysteine solution to a pressure of 25 cm H_2O. The left lung was drained and refilled eleven times, using a total of 16 liters of fluid. The patient's condition was so improved by the lung lavage that three days later the

right lung was similarly treated, with further improvement. It is felt that this treatment exerts its benefits by washing inspissated material from the tracheobronchial tree. (*Wasserman, K., and others: Lung Lavage (Alveolar Washing) in Alevolar Proteinosis, Amer. J. Med. 44: 611 (April) 1968.*)

PULMONARY FUNCTION Tests of pulmonary function were done before and at varying intervals after phrenic nerve section for phrenicofacial anastomosis in 14 patients with facial paralysis. Vital capacity decreased moderately postoperatively but by six months had returned to preoperative levels. Maximum breathing capacities and maximum flow rates were low prepoeratively (probably due to difficulty in performing the tests due to facial paralysis) and improved postoperatively. Distribution of inspired gas, measured by the single-breath test, was unaffected by phrenic nerve section. Unilateral phrenic nerve section has remarkably little effect on ventilating capacity in subjects with normal lungs. (*Fackler, C. D., and others: Effect of Unilateral Phrenic Nerve Section on Lung Function, J. Appl Physiol. 23: 923 (Dec.) 1967.*)

ELECTROPHRENIC RESPIRATION Radiofrequency electrophrenic respiration (EPR) has been used successfully on a long-term intermittent basis to manage a patient with pulmonary hypoventilation. The ability to use it only when desired, to adjust the amplitude of stimulation, and to control the rate of stimulation externally, has been made possible by use of the technique of radiofrequency transmission. EPR by stimulation of one phrenic nerve was carried out each night for ten months in one patient. Moderate fatigue of the stimulated diaphragm could be demonstrated after ten hours of stimulation. Further observation is required to determine if such fatigue is progressive. The future uses of radiofrequency EPR may include any condition of hypoventilation associated with an intact phrenic nerve and diaphragm. (*Judson, J. P., and Glenn, W. W. L.: Radio-Frequency Electrophrenic Respiration. Long-term Application to a Patient with Primary Hypoventilation, J.A.M.A. 203: 1033 (March) 1968.*)

CHEYNE–STOKES RESPIRATION Patients who had congestive cardiac failure were divided into those having Cheyne–Stokes respiration (CSR), and those with normal respiratory patterns. Clinical, circulatory and ventilatory response factors were studied. Both groups had decreased cardiac indices but, in addition, those with CSR had circulation times twice those of patients without CSR. Inhalation of 2 per cent CO_2 increased minute ventilation of patients with CSR and diminished the cyclic respiration. During breathing of air, alveolar carbon dioxide tension varied between 25 (hyperpnea) and 37 (hypopnea) mm Hg. Inhalation of 2 per cent CO_2 resulted in cyclic Pa_{CO_2} variations of 31 to 36 mm Hg. Femoral arterial blood gases were completely out of phase with alveolar gas tension; Pa_{O_2} during hypopnea was 75 mm Hg while during hyperpnea it was 60 mm Hg. Pa_{CO_2} during hypopnea was 33 mm Hg while during hyperpnea it was 39.5 mm Hg. The primary determinant of periodic respiration in patients with heart disease is prolonged circulation time (greater than 25 seconds). When CSR is seen with shorter circulatory delays, increased neural excitability, anemia or hyperemia probably is implicated. (*Lange, R. L., and others: Observation and Stimulation of the Circulation, Acid–Base Balance, and Response to CO_2 in Cheyne–Stokes Respiration, Circulation 37: 331 (March) 1968.*)

TRANSTRACHEAL VS IPPB The effectiveness of preventing postoperative pulmonary complications by instilling Alevair into the trachea through a percutaneous catheter was compared with intermittent positive-pressure ventilation in 50 patients. Of the 25 patients treated by the percutaneous catheter technique, one developed tracheobronchitis; the others were free of postoperative pulmonary complications. Of the 25 patients treated with IPPB postoperatively, ten developed pulmonary complications, including tracheobronchitis (1), atelectasis (4), pneumonitis (2), and severe pneumonia (3). (*Rochlin, L.: Percutaneous Endotracheal Catheterization and Intermittent Positive Pressure Breathing in the Prevention of Postoperative Pulmonary Complications, Amer. J. Surg. 115: 333 (March) 1968.*)