during intense hypoxia, the respiratory drive continues to be a consequence of the P_{CO_2} drive, even when the P_{CO_2} has been reduced far below normal. (*Honda, Y., and others: P_{CO_2} for Respiratory System in Acute Hypoxia of Dogs, J. Appl. Physiol. 18: 1053 (Nov.) 1963.*)

CARBON DIOXIDE Twenty-one subjects were exposed to 1.5 per cent carbon dioxide in air for 42 days. Respiratory minute volume and alveolar P_{CO_2} were increased throughout the exposure to carbon dioxide. Carbon dioxide retention with uncompensated respiratory acidosis persisted for the first 23 days of the experiment. After transition back to air, the respiratory minute volume decreased while the P_{CO_2} remained elevated for nine days. Carbon dioxide excretion was increased over normal during the nine day recovery period indicating a release of carbon dioxide from stores. (*Shaefer, K. E., and others: Respiratory Acclimatization to Carbon Dioxide, J. Appl. Physiol. 18: 1071 (Nov.) 1963.*)

HYPERVENTILATION Intermittent positive-negative respiration in 10 dogs resulted in a consistent reduction in arterial carbon dioxide content and rise in blood *p*H. This was accompanied by a fall in cardiac output and blood pressure which remained at a constantly depressed level. An immediate rise in renal arterial blood flow resulted which later fell below control values indicating a marked preferential increase in renal blood flow. (*Pollock, L., and others: Influence of Hyperventilation on Cardiac Output and Renal Blood Flow, Surgery 55: 299 (Jan.) 1964.*)

CONTROLLED VENTILATION Utilizing an open circuit nitrogen washout method, distribution in the lung of inspired gas was compared during spontaneous ventilation in the conscious and the anesthetized patient and also in the artificially ventilated, anesthetized, paralyzed patient. Induction of anesthesia or substitution of artificial ventilation for spontaneous ventilation caused no change in the uniform distribution of inspired gas. (*Bergman, N. A.: Distribution of Inspired Gas During Anesthesia and Artificial Ventilation, J. Appl. Physiol. 18: 1085 (Nov.) 1963.*)

COMPLIANCE AND RESPIRATORY RATE Measurements of pulmonary compliance were made at different respiratory frequencies in adult man. It was found that compliance decreased with an increasing respiratory frequency. The effect was greatest at low lung volumes, least in middle lung volumes, and decreased again at greater lung volumes. (*Mills, R. J., Cumming, G., and Harris, P.: Frequency-Dependent Compliance at Different Levels of Inspiration in Normal Adults, J. Appl. Physiol. 18: 1061 (Nov.) 1963.*)

RESPIRATORY EFFICIENCY Anesthetized paralyzed dogs were given intermittent positive pressure ventilation to a constant maximum inflating pressure using four separate pressure profile curves. The four profiles were: (1) rapid inspiration and rapid expiration; (2) slow inspiration, rapid expiration; (3) rapid inspiration, prolonged expiration; and (4) prolonged inspiration, prolonged expiration. The smallest alveolar-arterial gradients, both oxygen and carbon dioxide, occurred when the mean pressure during the respiratory cycles was high, and it was noted that decreases in mean pressure were consistently associated with increases in both oxygen and carbon dioxide gradients. A significantly high mean pressure during the respiratory cycle might be beneficial and lowering of the mean pressure during intermittent positive pressure breathing in an attempt to minimize circulatory effects might compromise respiratory efficiency. (*Bergman, N. A.: Effects of Different Pressure Breathing Patterns on Alveolar-Arterial Gradients in Dogs, J. Apply. Physiol. 18: 1049 (Nov.) 1963.*)

PULMONARY EFFUSION Pleural effusion reduces chest wall compliance slightly. Pleural thickening with effusion is accompanied by marked reduction in chest wall and lung compliance and reduction in lung volumes and diffusing capacity. Resorption of fluid leads to increasing lung volumes. Decortication may or may not reduce the changes due to pleural thickening. In patients with effusion and thickening, arterial blood gas values at rest are normal. (*Yoo, O. H., and Ting, E. Y.: Effects of Pleural Effusion on Pulmonary*

Function, Amer. Rev. Resp. Dis. 89: 55 (Jan.) 1964.)

EMPHYSEMA No reliable clinical criteria are available for separation of obstructive chronic pulmonary diseases, emphysema and chronic bronchitis, asthmatic bronchitis and intrinsic asthma. Epidemiological methods linked to autopsy evidence offer the only valid hope of definitely identifying the causative agent of emphysema. Likely the agent is one producing a vasculonecrotic injury followed by repair with minimal fibrosis resulting in a new membrane lining abnormal tissue spaces. Nitrogen dioxide inhalation can produce lesions in animals which may be the same as those of human emphysema. *(Wright, G. W., and Kleinerman, J.: Consideration of the Etiology of Emphysema in Terms of Contemporary Knowledge, Amer. Rev. Resp. Dis. 88: 605 (Nov.) 1963.)*

HYPERBARIC OXYGEN Administration of high pressure oxygen after carbon monoxide intoxication may be effective in two different ways, mainly dependent on the time at which treatment can be started. If given immediately, it restores the oxygen transport function of the blood. If it can only be started after some time oxygen at normal pressure should be administered while preparations for hyperbaric therapy are being made, and even at normobaricity, relatively little time is needed for recovery of the oxygen transport function to an extent sufficient for proper oxygenation of the tissues. However, there is a marked tendency for secondary hypoxia to develop due to cerebral swelling. Following a mild intoxication, administration of hyperbaric oxygen opposes this secondary hypoxia completely. Following a serious intoxication it takes a subsidiary position. Therefore, high pressure oxygen should be combined with or followed by hypothermia in those cases which fail to improve completely with high pressure oxygen alone. *(Sluijter, M. E.: Treatment of Carbon Monoxide Poisoning by Administration of Oxygen at High Atmospheric Pressure, Proc. Roy. Soc. Med. 56: 34 (Nov.) 1963.)*

OXYGEN THERAPY For treatment of hypoxic patients, a concentration of 45 to 60 per cent oxygen in inspired air is desirable. Higher concentrations can be obtained by the use of masks or other special methods such as the closed box, but for continuous administration to bed patients such methods ordinarily are neither necessary nor practical. If carefully applied and supervised, an oxygen concentration of 50 per cent is readily obtained in both the oxygen tent and open box. Among three other methods, viz., oropharyngeal insufflation by nasal catheter, the double nasal cannula, and the open-top plastic face mask, only catheter insufflation gives reliable results. Although the double cannula and plastic face mask are cheap and comfortable, both are inefficient. At 6 liter per minute oxygen flows, average oropharyngeal oxygen concentration with a catheter is 62 per cent. Marked drying of pharyngeal mucosa can be prevented by keeping the water in the humidification bottle at 125° F. A common cause of failure of the method is leakage, especially from water bottle attachments, and the physician should check for actual delivery of oxygen to the patient by listening at the patient's mouth to hear the hissing of oxygen as it leaves the catheter in the oropharynx. Gastric distention or rupture is a danger which must be prevented by not allowing the tip of the catheter to slip into the esophagus. *(Longobardi, A., and others: Oxygen Therapy on Medical Wards, J.A.M.A. 187: 369 (Feb. 1) 1964.)*

PRONE POSITION Ventilation was studied in patients in the prone position while face mask and muscle relaxants were being employed. Duration of anesthesia varied from 15 minutes to over one hour. Determinations of *p*H and P_{CO_2} proved ventilation to be adequate. Simultaneous measurements of blood samples from the aorta and ear lobes showed satisfactory and comparable results. *(Hessler, O., and Rehder, K.: Determination of pH and P_{CO_2} for Measurement of Ventilation in Prone Position with Face Mask, Der Anaesthesist 13: 3 (Jan.) 1964.)*

TRACHEAL RESECTION Resection of a tracheal tumor is ordinarily carried out with an endotracheal tube advanced beyond the tumor. In reported resection of the trachea