shunt-like intrapulmonary changes. Persistence of these changes is an important factor in the decreased arterial oxygen tension in the early postoperative period. (*Marshall, B. E., and others: Pulmonary Venous Admixture before, during, and after Halothane: Oxygen Anesthesia in Man, J. Appl. Physiol. 27: 653 (Nov.) 1969.*)

A-aD_{O_2} DIFFERENCE Respiratory gas exchange was measured in a group of healthy subjects and in patients with pulmonary disease during breathing of air at ambient pressure and during breathing of oxygen at a simulated altitude. In both conditions, inspired oxygen tensions were equal at about 145 mm Hg. In every subject alveolar–arterial oxygen tension differences were less during oxygen breathing at altitude than during breathing of air at ambient pressure. In one subject who had been studied previously during breathing of 1.44 per cent oxygen in helium at a simulated pressure of 14.6 atmospheres ($P_{I_{O_2}} = 149$), A-aD_{O_2} was greater under hyperbaric conditions than during breathing of air at ambient pressure. The observed results were attributed to the effect of ventilation–perfusion abnormalities on alveolar inert gas concentration, and provide a method for quantitating ventilation–perfusion abnormalities. An incidental observation was that physiologic deadspace increased during breathing of oxygen at altitude. (*Overfield, E. M., and Kylstra, J. A.: Distribution Component of Alveolar–Arterial Oxygen Pressure Difference in Man, J. Appl. Physiol. 27: 634 (Nov.) 1969.*)

OXYGEN TRANSPORT BY FLUOROCHEMICALS Oxygen is extremely soluble in certain synthetic fluorine compounds. The present study was designed to determine whether fluorochemicals in dispersed form might carry out the function of oxygen transport *in vivo*. Frogs whose blood contained fluorochemicals survived longer in carbon monoxide atmospheres than control non-treated frogs. Mice which had received intravascular infusions of fluorochemicals appeared to maintain consciousness longer and survived longer in CO than did non-treated mice. Thus, fluorochemicals were able to transport appreciable quantities of oxygen when hemoglobin was inactivated by CO. The extreme chemical inertness of fluorochemicals renders it unlikely that their site of action in prolonging survival was at the tissue cellular level. (*Soloviter, H. A., and others: Dispersed Fluorochemicals as Substitutes for Erythrocytes in Intact Animals, J. Appl. Physiol. 27: 666 (Nov.) 1969.*)

HYPEROXYGENATION Thirteen elderly male patients with measured cognitive deficits were treated with 30 intermittent exposures to pure oxygen at 2.5 atmospheres absolute. Five controls, each exposed at the same time and in the same manner as a paired experimental patient, breathed a low-oxygen mixture that maintained essentially normal alveolar oxygen tension despite increased ambient pressure. Arterial samples for blood gas determinations were obtained from each patient during one of the early hyperbaric exposures. Analysis showed the expected large intra-exposure increase in arterial oxygen tension in the experimental subjects. Negligible changes in arterial oxygen tension were found in the control patients. Posttreatment performances on psychological tests of cognitive function showed highly significant gains over pretreatment levels in experimental subjects, suggesting an improved performance that persisted beyond the temporary increase in arterial oxygen levels. Control patients showed no improvement in posttreatment cognitive function. (*Jacobs, E. A., and others: Hyperoxygenation Effect on Cognitive Functioning in the Aged, N. Eng. J. Med. 281: 753 (Oct.) 1969.*)

RUBEN VALVE The considerable rebreathing often seen with the Ruben valve can be eliminated by decreasing the size of the valve disk that closes at the end of inspiration. (*Vogel, H., Hakim, A., and Pfluger, H.: Rebreathing during Use of Ruben Valves, Der Anaesthesist 18: 247 (Aug.) 1969.*)

ISOLATED DOG LUNG METABOLISM Oxygen consumption, CO_2 production, glucose utilization, lactic acid production, glycogen deposition and plasma free fatty acids were measured in isolated perfused canine lungs respired with 5 per cent CO_2 in air under conditions of normal and elevated plasma glucose levels and subsequently after the addition