a single inspiration of active gas, the relative ventilation and blood flow of the regions has been assessed. This technique has the advantages in that it does not require local anesthesia or tracheal or bronchial intubation. It is also rapidly repeatable. (*Dyson, N. A., and others: Studies of Regional Lung Function Using Radioactive Oxygen, Brit. M. J. 1: 231 (Jan. 23) 1960.*)

ARTIFICIAL RESPIRATION Direct mouth-to-mouth artificial respiration is by far the best and most efficient method in an emergency. Most teachers, however, find it unsatisfactory to demonstrate because of esthetic objections, the fear of infection, and the difficulty in demonstrating it to lay people and rescue teams. A new airway device which includes a plastic Guedel airway, a flexible neck containing a brass bite-block, and a mouth guard is described. A vinyl plastic unidirectional valve assembly is inserted into the flexible neck. This assembly is known as the Brook airway. (*Dobkin, A. B.: Direct Artificial Respiration Training with the Brook Airway, Lancet 2: 662 (Oct. 24) 1959.*)

RESPIRATION An analysis of the mechanisms of respiratory failure falls into three zones of respiratory function. The ventilatory zone is concerned with the maintenance of the alveolar gas tensions. The diffusion zone concerns the passage of oxygen and carbon dioxide across the thin layer of fluid and endothelium which separates alveolar gas and capillary blood. The perfusion zone consists in the flow and pressure of the pulmonary circulation. The diseases that impair respiration can be grouped into similar categories. The principal structural effects of respiratory disease are airway obstruction, stiffening of the lungs, and reduction of the pulmonary vascular bed. The principal functional effects of respiratory disease are arterial unsaturation of oxygen, carbon dioxide retention, retention of sodium bicarbonate, and pulmonary hypertension. (*Arnott, W. M.: Respiratory Failure, Lancet 1: 1 (Jan. 2) 1960.*)

POSITIVE PRESSURE BREATHING Intermittent positive-pressure breathing with peak pressures of 20 cm. of water produced slight but definite decrease in cardiac output in patients with advanced pulmonary emphysema. The changes observed should be well tolerated by most patients. (*Cathcart, R. T., and others: Effect of Intermittent Positive Pressure Breathing on the Cardiac Output of Patients with Chronic Pulmonary Disease, Dis. Chest 37: 222 (Feb.) 1960.*)

TRANSTRACHEAL RESUSCITATION A transtracheal needle may be better than no airway at all and may under certain circumstances be useful (as in the very small infant, the largest needle being used). It probably cannot provide adequate ventilation in the spontaneously breathing person without extremely exhausting effort on the part of the patient. If the only aim is to provide diffusion respiration it is possible to supply an adequate amount of oxygen, but if high flow rates are used, dangerous pressures are necessary. In the rare situation in which the upper airway is totally obstructed, distention and rupture of the lungs appear real possibilities. It is believed that the technique of transtracheal resuscitation with a needle may delay the establishment of an adequate airway (which would be established better either with an endotracheal tube or via a tracheostomy) and in addition provide a false sense of security. In any event its usefulness for diffusion respiration rather than for to-and-fro respiration should be fully appreciated by persons employing the transtracheal needle for resuscitation of obstructed patients. (*Bougas, T. P., and Cook, C. D.: Pressure-Flow Characteristics of Needles Suggested for Transtracheal Resuscitation, N. E. J. Med. 262: 511 (March 10) 1960.*)

RESPIRATORY INSUFFICIENCY Administration of a new carbonic anyhydrase inhibitor, dichlorphenamide, in 15 patients with respiratory insufficiency, produced clinical improvement in all but one. In most cases, marked improvement in arterial blood gas tension was associated with an increased alveolar ventilation. Such improvement appeared to be sustained during prolonged administration of the drug. (*Namark, A., and others: The Effect of a New Carbonic Anhydrase Inhibitor (Dichlorphenamide) in*