**Tracheal Instillation of Retrograde Tracers**

Guinea pigs were anesthetized by intramuscular injection of ketamine hydrochloride (50 mg/kg) and xylazine hydrochloride (2.5 mg/kg). Thirty µl of rhodamine-labeled latex microspheres (Luma Fluor Inc., Naples, FL), 5% fast blue dye (Sigma Chemical Co., St. Louis, MO), or 10% saline were instilled into the proximal region of the trachea. The instillation technique involved a 50-µl Hamilton microsyringe with a curved metal feeding tube connected to the syringe. In addition, flexible wire covered with gauze was connected to a plexiglass board elevated 45°. The guinea pig was placed on the board by positioning the gauze wire behind the upper incisors to aid in the extension of the head and the opening of the mouth. Gauze-covered forceps were used to deflect the tongue outward and ventral. A light was positioned for optimal visualization of the posterior oral cavity. The feeding tube connected to the microsyringe was deflected downward past the posterior region of the tongue and into the laryngeal orifice. Once an increase in resistance was felt, the feeding tube was pushed through the laryngeal orifice and the tracer was immediately instilled into the proximal trachea. Upon entrance into the trachea, the microsyringe was rotated in a circular pattern to enable a greater chance of tracer distribution around the circumference of the trachea. In these experiments the fluorescent dyes were limited to the rostral region (approximately upper 25%) of the trachea. The animal was then removed from the plexiglass board and positioned supine during recovery from anesthesia.