

by adrenaline or ammonium chloride. All derivatives of phenothiazine arrest progress of edema; however, their effectiveness differs somewhat. (Raevskii, K. S.: *Influence of Some Derivatives of Phenothiazine on Experimental Toxic Lung Oedema*, *Byull. Eksper. Biol. i Med.* 43: 33 1957.)

PULMONARY EMBOLISM In the patient with suspected pulmonary embolism, simultaneous measurement of arterial and end-tidal carbon dioxide tensions may assist in diagnosis. In the absence of pulmonary infarction, a difference of less than 5 mm. of mercury implies either no embolism or an embolus occluding less than the equivalent of a lobar branch of the pulmonary artery. In the absence of emphysema, a large difference indicates pulmonary vascular occlusion. (Robin, E. D., and others: *A Physiologic Approach to the Diagnosis of Acute Pulmonary Embolism*, *New England J. Med.*, 260: 586 (March 19) 1959.)

HIGH ALTITUDE The concentration of lactic acid, sodium, potassium and calcium was measured in four structures of the brain 3 hours after death in anesthetized and unanesthetized dogs which had been subjected to simulated altitude of 30,000 feet. There was elevation of: (a) the sodium concentration in the corona radiata but not in the cerebral cortex or caudate nucleus; (b) the calcium concentration in cortex, corona radiata and caudate nucleus; (c) the lactic acid concentration in all the tissues. No potassium changes were seen. Effect of pentobarbital anesthesia was very slight. (Van Fossan, D. D., and Biddulph, C.: *Effects of Altitude and of Anesthesia on Brain Electrolytes and Lactic Acid*, *Am. J. Physiol.* 196: 1063 (May) 1959.)

HYPOTHERMIA Neither prednisolone nor hypothermia when used alone significantly decreased mortality from cerebral damage in rabbits. However, hypothermia and prednisolone used in combination decreased the mortality from the cerebral injury and increased the survival time of those animals dying. (Raimondi, A. J., and others: *The Effect of Hypothermia and Steroid Therapy on Experimental Cerebral Injury*, *Surg. Gynec. & Obst.* 108: 333 (March) 1959.)

GASTRIC HYPOTHERMIA Gastric digestion is retarded considerably by local gastric cooling. Inhibition of peptic activity is the primary cause of this suppression of gastric digestion. Local gastric cooling in man can be obtained by circulating a coolant (equal parts ethyl alcohol and ice-cold water) through a system of tubes and balloons in the stomach. This technique has been applied in treating nineteen patients who had unrelenting hemorrhages from the duodenum, stomach, and esophagus and who, in spite of massive replacement therapy, were in a condition too precarious for emergency operation. Prompt cessation of hemorrhage occurred in all patients, thus accomplishing either adequate treatment or a period in which restoration to normal blood volume and optimal condition for any necessary definitive surgical therapy could occur. Local gastric hypothermia is rational for situations in which the digestive activity of gastric juice may be responsible for continued erosion and hemorrhage. It should not be relied on in situations complicated by blood dyscrasias, carcinoma, and other miscellaneous disorders. (Wangenstein, O., and others: *Depressant Action of Local Gastric Hypothermia on Gastric Digestion*, *J. A. M. A.* 169: 1601 (April 4) 1959.)

NEW NEUROPHYSIOLOGY Based on current work of the past few years, the four basic tenets or basic concepts of neuron doctrine which arose from electrophysiological studies of the 1920's and 1930's are slowly changing: (1) that all or none impulse with after potentials as the only true form of nervous activity is changing to the idea that some neurons have two axons and can deliver two non-identical nerve impulses simultaneously in two different directions; (2) that neuron excitation spreads to all parts of the neuron as a propagated nerve impulse is changing to the idea that neuronal excitation impulses do not spread directly but prepare the neuron for firing at some given spot within the cell, e.g., at base of axon; (3) that dendrites propagate impulses toward a cell body is changing to the idea that impulses may spread and exert influence on other neurons by electrotonic spread; (4) that the synapse is the only point of selection, evaluation, fatigue and facilitation

of impulses is changing to the idea that labile and integrative processes take place at several loci within different parts of the neuron, and the neuron does not pass on all signals in a one-to-one ratio, but may exert some selective and evaluative action on received signals. Spontaneous neuronal activity may rest on a continuous change of state of intraneuronal subthreshold potentials, which in turn determines the cell's responsiveness to input stimuli. (Bullock, T. H.: *Neuron Doctrine and Electrophysiology*, *Science* 129: 997 (April 17) 1959.)

FLUOTHANE Most of over 2000 surgical and obstetrical patients received the agent via a semi-closed circle absorption technique from the Foregger copper kettle machine. Eight known asthmatic patients received Fluothane with no complications. Although no difficulties were experienced with its use for delivery, fluothane has been abandoned for deliveries because of reports of excessive bleeding postpartum. Considerable reduction of the pharyngeal and laryngeal reflexes was noted with less "bucking" on the endotracheal tube even under light anesthesia. Rapid reversibility of action, reduction of nausea and vomiting, and minimal complications were principal advantages. (Ausherman, H. M., and Adan, A.: *Fluothane: A New Nonexplosive Volatile Anesthetic Agent*, *South. M. J.* 52: 46 (Jan.) 1959.)

FLUOTHANE The incidence of hypotension in a group of 100 patients anesthetized with Fluothane was compared with hypotension noted in a similar group of patients anesthetized with other agents. Fifty-nine of those anesthetized with Fluothane exhibited a fall in blood pressure during induction, while only 31 of those anesthetized with other agents showed a similar hypotension. Four possible causes of hypotension have been suggested: ganglion blocking; myocardial depression; central depression of the vasomotor center, stimulation of baroreceptors. Data is presented which makes the first two seem unlikely. No data is available to support the third thesis. Use of vaporizers delivering a known amount of Fluothane into a semi-closed system with 4 to 6 liters constant gas flow is recommended. If a

closed system is used, the vaporizer must be placed between the gases being supplied from the machine and the inlet to the circle system. (Bourgeois-Gavardin, M., and others: *Fluothane: Incidence and Significance of Hypotension*, *South. M. J.* 52: 53 (Jan.) 1959.)

ADDICTION TO FLUOTHANE A case report and court disposition of an anesthetist accused of addiction to Fluothane are presented. (*Medicine and the Law: Lancet* 1: 464 (Feb. 28) 1959.)

ANALGESICS In the rat, the ratio of the analgesic to the respiratory depressant potency was the same for morphine, codeine, diamorphine, and methidone. The relative respiratory depressant activity of pethidine tended to be less, but the difference was not significant. Some compounds (morphine) had a greater effect on gastrointestinal propulsion than others (pethidine) when given at moderate analgesic dose levels. (Green, A. F.: *Comparative Effects of Analgesics on Pain Threshold, Respiratory Frequency and Gastrointestinal Propulsion*, *Brit. J. Pharmacol.* 14: 26 (March) 1959.)

HYDROCORTISONE LEVELS The effect of therapeutic doses of morphine and nalorphine on ACTH release in man has been studied. The primary effect of therapeutic doses of morphine or nalorphine on early morning ACTH release in sedated normal subjects is a suppressant one. In non-sedated subjects, morphine was capable of depressing mid-day ACTH release as well as ACTH release induced by a vasopressor. This effect may vary depending upon the responsiveness of the recipient. (McDonald, R. K., and others: *Effect of Morphine and Nalorphine on Plasma Hydrocortisone Levels in Man*, *J. Pharmacol. & Exper. Therap.* 125: 241 (March) 1959.)

VASOPRESSORS The critical factor in maintenance of adequate circulating volume depends on moment vasomotor control at the level of metarterioles and precapillaries to prevent excess amounts of blood going through capillary beds and being sequestered there. It is estimated that 17 per cent or more of circulating volume can be pooled in peripheral capillary beds. When low blood volume shock