bromophenol-blue complexes. In six myasthenic patients given neostigmine by mouth, less than 5 per cent of the drug was excreted in the urine unchanged, while six similar patients given pyridostigmine by mouth excreted 2 to 16 per cent of this drug. On the other hand, two myasthenic patients given neostigmine intramuscularly excreted up to 67 per cent of the drug in the urine. It would appear neostigmine is partially metabolized in the alimentary tract and that it is less readily absorbed than pyridostigmine. (*Nowell, P. T., Scott, C. A., and Wilson, A.: Determination of Neostigmine and Pyridostigmine in the Urine of Patients with Myasthenia Gravis, Brit. J. Pharmacol. 18: 617 (June) 1962.*)

POTASSIUM DEPLETION The weight of available clinical and experimental evidence does not support the thesis that prolonged administration of benzothiadiazine drugs produces a significant depletion of body potassium, other than an initial transient phase. Renal compensatory mechanisms subsequently lead to readjustments, so that the chronic hypokalemia which may be present represents a deviation from the normal intracellular-extracellular potassium concentration gradient and not a total depletion. It is a relatively benign state, except for its possible potentiation of digitalis toxicity. Deliberate routine supplementation of potassium intake over long periods of therapy with benzothiadizine drugs is unjustified. (*Weller, J. M.: Potassium Depletion and Benzothiadiazine Drugs—A Source of Over-Concern?, Amer. Heart J. 63: 842 (June) 1962.*)

INTRAMUSCULAR SUCCINYLCHOLINE The intramuscular injection of 0.75 mg./kg. succinylcholine chloride, dissolved in water, to ten conscious human subjects caused, within five minutes, an average 70 per cent decrease in grip strength and a 40 per cent decrease in vital capacity. Both parameters returned to control values within 15 minutes. The intramuscular injection of 4 mg./kg. succinylcholine, dissolved in water, to ten lightly anesthetized subjects caused apnea in nine within an average time of two minutes and 35 seconds. The average duration of apnea was 14 minutes and 41 seconds, and respiratory tidal volume returned to control values within an average time of 30 minutes and 19 seconds. The same dose of succinycholine, dissolved in saline, caused apnea in only three of ten anesthetized subjects in four minutes and 13 seconds. The development of the maximum decrease of respiratory tidal volume in the remaining seven subjects was delayed beyond ten minutes and averaged 60 per cent of control. The average duration of the respiratory depression was 33 minutes and 33 seconds. The differences between succinylcholine dissolved in water and dissolved in saline are probably due to different speed of absorption. The intramuscular administration of a 4 mg./kg. succinylcholine dissolved in water to a cirrhotic patient with low plasmacholinesterase activity caused apnea of 51 minutes and respiratory depression of 80 minutes duration. (*Foldes, F. F., and others: Experimental Studies with Intramuscular Succinylcholine in Conscious and Anesthetized Subjects, Der Anaesthesist, 11: 144 (May) 1962.*)

BARBITURATE METABOLISM Paper chromatographic studies of urine and plasma in 18 dogs showed different metabolic pathways for n-methyl-butabarbital and n-methyl-thio-butabarbital. While N-methyl-butabarbital is detoxified by side chain oxidation and demethylation, the N-methylated thiocompound is metabolized by destruction of the barbituric acid ring. The faster recovery after N-methylated thiobutabarbital, in contrast to thiobutabarbital is explained on this particular pathway of detoxification, rather than redistribution factors. (*Frey, H. H.: Untersuchungen über das Schicksal eines N-methyl-thiobarbiturates im Organismus, Arch. Int. Pharmacodyn. 134: 175 (Nov.) 1961.*)

NEUROMUSCULAR BLOCKADE AND EEG Sleep may be the result of deafferentation of the cortex, with resulting electrocortical synchronization. Desynchronization is characteristic of the awake state. The administration of neuromuscular blocking agents should reduce afferent impulses from muscles, tendons, and joints, and should predispose to somnolence. Somnolence and electrocortical synchronization were produced by the intravenous administration of Flaxedil, or Flaxedil plus barbiturate. Intracarotid injection did not have the same effect, showing that this

was not a direct effect of the drug on the brain. Animals could be maintained in a somnolent state with flaxedil alone, but environmental stimuli produced desynchronization and arousal. (*Hodes, R.: Electrocortical Synchronization Resulting from Reduced Proprioceptive Drive Caused by Neuromuscular Blocking Agents, Electroencephalog. Clin. Neurophysiol. 14: 220 (Apr.) 1962.*)

ALKALOSIS AND EEG Patients were lightly anesthetized with ether or nitrous oxide, then were passively hyperventilated with a Jefferson ventilator for three to four hours. Eighty per cent nitrous oxide or 4 per cent ether was used. Arterial blood samples drawn at intervals showed average P_{CO_2} of 14 mm. of mercury and average *p*H of 7.6. The patients failed to show prominent slow activity on the electroencephalographic pattern. This type of change has been described by others during alkalosis, and attributed to cerebral vascular constriction and hypoxia. (*Hughes, J. R., and others: The EEG in Hyperventilated, Lightly Anesthetized Patients, Electroencephalog. Clin. Neurophysiol. 14: 274 (Apr.) 1962.*)

ANTICHOLINESTERASE POISONING In organophosphorous cholinesterase poisoning death can be assigned to combinations of central respiratory inhibition, bronchospasm and hypersecretion in the respiratory tract, vasodilation, neuromuscular paralysis, and convulsions of central origin, all assumed to be the direct result of accumulated acetylcholine. Of these atropine can only reduce the sensitivity of the end-organs in the respiratory tract. To test the hypothesis that more effective cholinolytic compounds than atropine can be found, 34 synthetic compounds were screened for potency in mice and rats. G-3063 and Win 5779-6 were two of the most promising. Combinations of these drugs with atropine and cholinesterase-reactivating oximes such as P-2-S gave greater protection. Triflupromazine also raised the poisoning threshold. (*Coleman, I. W., Little, P. E., and Bannard, R. A. B.: Cholinolytics in the Treatment of Anti-cholinesterase Poisoning, Canad. J. Biochem. Physiol. 40: 815 and 827 (June) 1962.*)

PHEOCHROMOCYTOMA The persistent hypertension of patients with this tumor is of no special worry to the anesthetist; it is the paroxysmal hypertension superimposed on that already present that must be controlled. Phentolamine hydrochloride (Regitine) used intravenously in dosage of up to 5 mg. repeated as required is a quick-acting, effective blocking agent of short duration. Unfortunately the fall in blood pressure is accompanied by tachycardia, and the additive effects with preexisting tachycardia may be alarming. Phenoxybenzamine (Dibenzyline) is a more potent blocking agent primarily used preoperatively to stabilize the patient's blood pressure at a more physiological level. Fifty milligrams diluted in 250–500 ml. may be given intravenously on four successive preoperative days. Because its onset of action is slow (about an hour), it should not be given during the operation. Blood loss during removal of these tumors can be large and must be meticulously replaced. After removal of the tumor, noradrenaline 8 mg./1,000 ml. is infused empirically to sustain a systolic blood pressure of about 120. This dosage is gradually reduced, weaning usually occurring within 24 hours. Ganglion blocking agents should not be used, since a further rise in blood pressure may result. (*Ross, E. J., and others: Management of Cases of Pheochromocytoma, Proc. Royal Soc. Med. 55: 427 (June) 1962.*)

SCLEREMA NEONATORUM This process is characterized by non-pitting induration of subcutaneous tissue. The skin over the involved areas seems bound to the underlying structures and assumes a cool, smooth, purple appearance. Progression of the process to involve the skin of the chest with progressive respiratory distress is the usual terminal event. Etiology is unknown but may be due to insufficient peripheral circulation such as occurs during shock or exposure to cold. Successful treatment with adrenal steroids has been reported but mortality remains high. (*Rader, L. E., and Williams, G. R.: Sclerema Neonatorum Complicating Surgical Procedures, A.M.A. Arch. Surg. 84: 625 (June) 1962.*)