meter, it is now possible to measure blood flow continuously and simultaneously in the cerebral, coronary, renal and hepatic circulation of dogs. Data revealed that each organ possesses its own characteristic response to shock and vasopressor drugs, that the circulation of the intestine as well as that of the kidney plays a vital role in circulatory homeostasis during acute shock and that the use of vasopressor drugs in shock increased the circulation to the brain and the heart while, at the same time, the blood flow to the intestine and kidney was decreased. The concepts of "mesenteric vascular insufficiency" and conclusions of clinical significance are discussed in detail. (*Corday, E., and Williams, J. H., Jr.: Effect of Shock and of Vasopressor Drugs on Regional Circulation of Brain, Heart, Kidney and Liver, Amer. J. Med. 29: 228 (Aug.) 1960.*)

ATROPINE The effect of 1.5 mg. of atropine sulfate intramuscularly upon blood pressure, pulse rate, respiration rate, pupil size, power of accommodation and perception was compared with that of the same dose of atropine sulfate given in combination with 5 mg. of metaraminol bitartrate (Aramine). Addition of metaraminol bitartrate resulted in a significantly higher mean systolic blood pressure, a larger pulse pressure and a slower heart rate during the hour following administration. Pupillary dilatation was also less. Visual perception was not significantly influenced. (*Taylor, W., and others: Use of Metaraminol Bitartrate to Reduce Side Effects of Atropine, Canad. M. A. J. 82: 1147 (June 4) 1960.*)

ATROPINE METABOLISM Two men were injected with a single 2-mg. dose of isotope labelled atropine. Between 85 and 88 per cent of the radioactivity was excreted in the urine within the first 24 hours. No activity was found in expired air, and only a trace could be extracted from feces. About half the dose appeared in the urine as intact atropine. More than a third was excreted as unknown metabolites, which appeared to be esters of tropic acid; less than 2 per cent appeared as free tropic acid. Neither hydroxylation of the aromatic ring nor glucuronide formation could be demonstrated. In man the ester bond is largely preserved and most if not all modifications in the molecule occurs in the tropine moiety. (*Gosselin, R. E., Gabourel, J. D., and Willis, J. H.: Fate of Atropine in Man, Clin. Pharmacol. Ther. 1: 597 (Sept.-Oct.) 1960.*)

NEUROMUSCULAR TRANSMISSION There are three types of neuromuscular block: depolarization, non-depolarization and dual. Recovery from dual blocks is slow unless aided by anticholinesterase therapy. When there is apnea at the end of an operation, the diagnosis of the cause can be made by using a peripheral nerve stimulator. Muscular paralysis can be differentiated from depression of the respiratory center. Observation of the hand muscles allows distinction between a depolarization and a dual type of neuromuscular block. (*Churchill-Davidson, H. C.: Review of Neuro-Muscular Transmission, Der Anaesthesist 9: 253 (Aug.) 1960.*)

MUSCLE RELAXANT PAIN The incidence of muscle pain and stiffness in 100 patients given suxethonium and suxemethonium was found to be the same for both drugs, namely, 25 per cent complained of severe stiffness or pain and an additional 45 per cent of mild stiffness. Stiffness was mostly in the neck, abdomen and chest. Onset of symptoms is from 12–24 hours postoperatively. Duration of symptoms is 4–5 days on the average. The incidence and severity of symptoms appears to vary with the dose of relaxant used. (*Parbrook, G. D., and Pierce, G. F. M.: Comparison of Post-Operative Pain and Stiffness After Use of Suxamethonium and Suxethonium Compounds, Brit. Med. J. 2: 579 (Aug. 20) 1960.*)

TUBOCURARE A quantitative study of the antagonism between acetylcholine and tubocurarine was made by taking depolarization of the end-plate skeletal muscle as a measure of drug-action. The results are consistent with the hypothesis that these substances compete on a one to one basis for receptors at the end-plate. Micro-electrodes were employed to show that individual end-plates do not vary greatly in their sensitivity