

vacuum siliconized ACD solution bottle, and stored at 4 C., remains essentially intact during a period of 48 hours. This is especially true of the platelets, which appear to be the critical element in the production of hemorrhagic diathesis during massive blood transfusion therapy. When an emergency need arises for massive transfusion therapy, it is recommended that one unit of blood drawn as described be utilized for every three units that have been stored more than 48 hours, or which have been drawn into vacuum nonsiliconized containers. When such a technique is followed, hemorrhagic diathesis generally will be avoided. (Senhauser, D. A.: *Preservation of the Coagulation System in Stored Whole Blood*, *Cleveland Clin. Quart.* 27: 125 (July) 1960.)

CARDIAC MONITOR While being prepared for a lung operation, a patient died when he received a 325-volt shock from a cardiac monitor. One electrode had been attached to the patient's thumb, one to his head, and a third diathermy plate-electrode to his right leg. This third electrode was connected to the case of the instrument which was assumed to be grounded. When the instrument was switched on, the patient moved but, as this often happens, no particular notice was taken. However, when the anesthetist received a shock of "some magnitude" when he touched the patient, something was obviously wrong. When the monitor was examined, it was found not to be grounded. Apparently the grounding connection to the case had been omitted in error. This was a commercially available product and not a "home-made" instrument. (*Medicine and The Law: Fatal Shock from Cardiac Monitor*, *Lancet* 1: 872 (April 16) 1960.)

PULMONARY CIRCULATION Long periods of extracorporeal circulation produce a decrease in the diffusion capacity of the lungs. This may be caused by lack of lung perfusion during bypass, capillary occlusion by blood particles or the general effect of blood trauma. These effects can be reduced by using the autogenous lung as an oxygenator. When bypass techniques are combined with cooling to 20 C, the flow can be small and

periodically arrested. In this latter situation, blood trauma is reduced. (Alctras, H., and others: *Pressure Conditions in Pulmonary Circulation During Cardiac By-Pass by Double Pumps*, *J. Thor. & Cardiovasc. Surg.* 40: 35 (July) 1960.)

HYPOTENSIVE DRUGS Usually the most satisfactory treatment of hypertension results from treatment with 2 or more hypotensive agents, sometimes with the added potentiating effect of chlorothiazide. The veratrum alkaloids act by eliciting the Bezold reflex whose receptors are in the myocardium and whose afferent fibers are in the vagus. The effects include hypotension, bradycardia and some peripheral vasodilatation. Postural hypotension does not occur. Hydrallazine acts mainly on brain stem centers, but it also has some sympatholytic effect as well as some direct action on the peripheral vessels. The diastolic pressure falls, tachycardia occurs and the cardiac output rises. Visceral, including renal, flow rises as does flow to the extremities. Angina may occur. Reserpine produces some fall in blood pressure due to its tranquilizing effect, but the main action is central, probably on the hypothalamus. It is capable of depleting tissues of serotonin and norepinephrine and this may be related to its hypotensive action. Bradycardia also occurs. It potentiates the effects of other hypotensive agents especially ganglionic blocking agents. Adrenergic blocking agents such as phenoxybenzamine and phentolamine block the effects of stimulation of sympathetic nerves as well as the effects of circulating epinephrine and norepinephrine. Bretylium blocks the effects of sympathetic stimulation without blocking the effect of circulating catechol amines, in fact enhancing them. These agents produce postural hypotension. The ganglionic blocking agents consist of quaternary ammonium compounds and secondary and tertiary amines. Examples of the former are tetraethyl ammonium, pentamethonium, hexamethonium, pentolinium and chlorisondamine. These drugs block all autonomic ganglia and all produce postural hypotension. Their effect is enhanced by vasodilatation and hypovolemia. Mecamylamine, a secondary amine, and pempidine, a tertiary amine, act in a similar manner, but their dura-