

biochemical processes in the platelet must be functioning. (Zucker, M. B., and Borrelli, J.: *A Survey of Some Platelet Enzymes and Functions: The Platelets as the Source of Normal Serum Acid Glycerophosphatase*, *Ann. New York Acad. Sc.* 75: 203 (Oct. 13) 1958.)

PROTHROMBIN ACTIVATION Prothrombin is the only necessary activating factor for thrombin. The other clotting factors are seen as aids to thrombin when it exercises its qualities as an enzyme. These include: calcium ions, Ac-globulin, platelet 3 factor, etc. Opposed to these, and almost in exact balance are: heparin, sphingosine, antithrombin, fibrinogen, etc. (Seegers, W. H.: *Is Thrombin the Only Enzyme Involved with Prothrombin Activation?*, *Ann. New York Acad. Sc.* 75: 182 (Oct. 13) 1958.)

THROMBIN-FIBRINOGEN INTERACTION The conversion of fibrinogen to a fibrin clot in the presence of thrombin (and absence of serum factor and calcium ions) may be formulated in three reversible equations: (1) the proteolysis of fibrinogen in the presence of thrombin to a fibrin monomer; (2) the polymerization of the fibrin monomer to intermediate polymers; and (3) the formation of the fibrin fibril. Each of these equilibriums is studied. Thrombin is necessary only for the first equation and does not take part in the polymerization steps. (Scheraga, H. A.: *Thrombin and Its Interaction with Fibrinogen*, *Ann. New York Acad. Sc.* 75: 189 (Oct. 13) 1958.)

BLOOD CELLS In sleep a single dose of barbiturates caused leucopenia with a fall of the number of reticulocytes and granulocytes and a slight shift to the left. These changes were well developed after the administration of barbamyd but only slightly so after noctal, nembutal, medinal or sonbutal. In experimentally produced anaemia by repeated bleeding of mice, barbamyd delayed the time of full blood regeneration, whereas other barbiturates had no such effect. (Runova, M. F.: *Effect of Barbiturates on the Blood Picture in Normal Animals and Animals with Experimentally Produced Anaemia*, *Byull. Eksp. Biol. i Med. Suppl.* 1, p. 38-41 1957.)

TRANSFUSION The development of jaundice in 12 injured and 4 burned subjects soon after transfusion with stored blood has been studied. In 9 injured and 2 burned patients the jaundice was also related to operation and general anesthesia. The jaundice, which generally disappeared within a week, was deemed to be hepatic in origin because it was associated with direct serum van den Bergh reaction, bilirubinuria, urobilinuria, and often a raised serum alkaline phosphatase level. No evidence of blood incompatibility or intravascular haemolysis were noted. It was concluded that the jaundice resulted from a combination of two factors. Temporary hepatic impairment probably resulted from a lowered hepatic circulation produced by injury, burning, subsequent operations, and anesthesia, singly or in combination. An acute loading of the bloodstream with bilirubin derived from extra-vascular destruction of the non-viable red cells in stored blood was superimposed upon this temporary hepatic dysfunction. The blood transfusion appeared, thus, to have acted as a bilirubin-loading test of liver function, and since this was acutely disturbed, jaundice with biliuria appeared. (Sevitt, S.: *Hepatic Jaundice After Blood Transfusion in Injured and Burned Subjects*, *Brit. J. Surg.* 46: 68 (July) 1958.)

EXCHANGE TRANSFUSION The use of exchange transfusions in the management of an adult with acute renal failure due to a hemolytic transfusion reaction is reported. Relief of convulsions was almost immediate, the level of consciousness was raised, and the patient went on to complete recovery following one exchange. (Smiley, R. K.: *The Use of Exchange Transfusions in Acute Renal Failure*, *Canad. M. A. J.* 79: 740 (Nov. 1) 1958.)

CEREBRAL BLOOD FLOW Cerebral blood flow (Nitrous Oxide technique) was significantly depressed in 12 of 13 patients with mitral stenosis. Rebreathing of 5 per cent carbon dioxide was followed by increases in cerebral blood flow which were somewhat less than reported to occur in normal volunteer subjects. (Dewar, H. A., and Davidson, L. A. G.: *The Cerebral Blood Flow in Mitral*

Stenosis and Its Response to Carbon Dioxide, Brit. Heart J. 20: 516 (Oct.) 1958.)

CIRCULATORY SHUNTS An improved method of detecting shunts by means of the nitrous oxide test utilizing 50 per cent nitrous oxide in the inspired mixture is described. In 78 tests in subjects without shunts the nitrous oxide content from the right atrium, ventricle or pulmonary artery was less than 15 per cent of the arterial content. In 72 tests on patients with left to right shunts this figure was 20 per cent or larger in all but 2 tests. Small shunts gave ratios of 20 to 40 per cent; intermediate shunts gave ratios of 40 to 60 per cent; large shunts gave ratios exceeding 60 per cent. (*Sanders, R. J., and Morrow, A. G.: The Diagnosis of Circulatory Shunts by the Nitrous Oxide Test, Circulation 18: 856 (Nov.) 1958.*)

SHOCK Sepsis as the cause for acute circulatory collapse is illustrated by 41 cases. Sixteen survivals resulted from prompt recognition and treatment with antibiotics, arterenol, oxygen, a moderate amount of blood and fluids and in some cases hydrocortisone. In spite of previous fear of dissemination of bacterial infection by cortisone therapy, its use appeared to be valuable in these cases. Operation in the face of critical illness is necessary in some. (*Altemeier, W. A., and Cole, W. R.: Nature and Treatment of Septic Shock, A. M. A. Arch. Surg. 77: 498 (Oct.) 1958.*)

IRREVERSIBLE SHOCK No absorption of Chromium-labeled endotoxin from various portions of the bowel was observed in normal dogs or in dogs subjected to irreversible hemorrhagic shock. Increased susceptibility of dogs subjected to reversible hemorrhage and then injected with 0.001 LD₅₀ dose of endotoxin was not demonstrated. (*Sanford, J. P., and Noyes, H. E.: Studies on the Absorption of "Escherichia Coli" Endotoxin from the Gastrointestinal Tract of Dogs in the Pathogenesis of "Irreversible" Hemorrhagic Shock, J. Clin. Invest. 37: 1425 (Oct.) 1958.*)

SURGICAL BLOOD LOSS Blood loss during surgery was measured by colorimetric and gravimetric means. The former was found to be more accurate. All methods underestimate

loss. Factors which influence the loss are type and duration of operation, surgical technique, patients' age and weight and presence of arteriosclerosis. No relation to preoperative blood pressure and type of anesthesia was found. (*Kragelund, E.: Operative and Post-operative Blood Loss, Acta chir. scandinav. 115: 160, 1958.*)

BLOOD VOLUME A transfusion index is established by utilizing the alteration in hemoglobin concentration following a blood transfusion expressed as a percentage of the normal response to a corresponding transfusion. Using this method the reduction in blood volume, particularly in patients with weight loss, can be demonstrated. (*Clements, H. J., and Kragelund, E.: Clinical Estimation of Blood Volume in Surgical Patients with Weight Loss, Acta chir. scandinav. 115: 170, 1958.*)

HYPNOTIC ACTIVITY Narcotics, with the exception of the alkaloid group containing morphine and allied substances, have the power of inhibiting at low concentrations the respiration of isolated brain tissue in the presence of glucose or pyruvate, especially if this is examined in the form of intact slices or as brain mitochondria. This applies to local anesthetics, to chlorpromazine and to the steroid narcotics. There appears to be a close relation between hypnotic activity and respiratory inhibition among narcotics and anesthetic agents of different chemical types. (*Quartel, J. H., and Scholefield, P. G.: Biochemical Aspects of Cerebral Dysfunction, Am. J. Med. 25: 420 (Sept.) 1958.*)

NARCOTIC WITHDRAWAL IN INFANTS The increase in incidence of narcotic addiction among adults during recent years has resulted in an increased number of infants born of addicted mothers. Withdrawal symptoms frequently appear within several hours following birth and consist of hyperactivity, trembling, twitchings, or convulsions; shrill, high-pitched, prolonged cry; and the appearance of being constantly "hungry" with sucking of the hands and fingers. Although a large percentage of these infants are prematurely born, with consequent high morbidity and