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ERYTHROCYTES


Serum folic acid activity was low (below 2.3 mg./ml.) in 7 of 46 patients with chronic liver disease. 35 of whom had alcoholic cirrhosis. This incidence was lower than that found by Herbert (44 per cent). (Abstractor's note: The present reported incidence agreed with that found in 15 Stockholm patients.)—P. G. R.


In 12 patients with untreated tropical sprue, all of whom had a megaloblastic anemia and a subnormal serum concentration of vitamin B12, corrected whole blood folate levels were subnormal in every case, but serum folate levels were reduced in only 6. The authors concluded that the determination of whole blood folate activity was more reliable than serum assay in the detection of folate deficiency in tropical sprue.—F. A. K.


The authors demonstrated, with bags made from segments of inverted guinea pig intestine, the neutralization by a specific antiserum of an intrinsic factor antigen in extracts of gastric mucosa. Free intrinsic factor was able to bring to the intestinal surface radioactive vitamin B12, whereas it could not if combined to antiserum. Based on these principles, the authors developed an immunological method for the determination of intrinsic factor in gastric mucosa. They concluded that this test gave more accurate results than the Schilling test. In the presence of large amounts of B12-binding substances, it was necessary to increase the amount of radioactive B12.—J. C.


Ninety patients with severe blood loss anemia (average Hb 4.8 Gm. per cent) and benign lesions, such as submucous myoma or dysfunctional uterine bleeding, were treated with oral or parenteral iron and an estrogen-progestin combination. Deluteval 2 x (17 Hydroxyprogesterone caproate and estradiol valerate; 1 ml. = 250 mg. progesterin ester +
5 mg. estrogen ester) was given in doses of 2 ml. intramuscularly once a week. Bleeding usually stopped in 48–72 hours, but tended to recur 9–10 days after the last hormone injection before surgery. Sixty patients came to hysterectomy, but normal hemoglobin levels were restored in 49 of these without transfusion. In the other 30 patients, the estrogen-progestin combination suppressed the ovulatory cycle and stopped the bleeding, in some only while on maintenance therapy, and in others permanently.—R. O. W.


Using previously prepared heparinized capillary tubes which contain a dried methylene-blue-ACD reagent, tests for deficiency of G-6-PD can be run in 3 hours on finger-prick blood, as long as the ambient temperature is 20–43 °C. A positive control is run each time. While similar to a previously described method, this one has the advantage of a wide effective temperature range.—C. R. M.


Splenectomy and folic acid administration appeared to have ameliorated significantly the anemia present in a Spanish-Iraqi infant boy whose erythrocytes and leukocytes were markedly deficient in G-6-P-D activity.—J. B. S.


Two Negro male infants, subsequently shown to have G-6-P-D deficiency, developed hemolytic icterus on the first day of life and later required exchange transfusion. Large numbers of Heinz bodies were seen in the erythrocytes of the one infant studied. One of the mothers had received less that 2 days of Kynex therapy. The other mother had ingested relatively small amounts during the 2 weeks prior to delivery.—J. B. S.


A Caucasian boy, apparently well until 13 years of age, developed severe anemia, jaundice and splenomegaly. Peripheral blood smear revealed normochromic or somewhat hyperchromic erythrocytes whose area of relative pallor was frequently eccentric. Some red cells had a slit-like or curvilinear area of pallor; others demonstrated a central dense ridge with pallor on either side. Examination of a wet drop preparation revealed many erythrocytes resembling mushroom caps or spheres deeply invaginated on one side. Blood from the patient was grossly hemolysed after 6 to 24 hours of refrigeration. Autohemolysis was abnormally increased at 37 °C., but to a lesser degree than at 5 °C. Changes in osmotic fragility paralleled changes in autohemolysis. Hemolysis at 5 °C. was inhibited by addition of ACD. Heinz body formation after incubation with acetylphenylhydrazine was much more dramatic than that seen in control erythrocytes. This finding was associated with subnormal GSH levels without evidence of GSH instability. Glutathione reductase and G-6-P-D levels were normal. Family studies were unremarkable.—J. B. S.


Spectrophotometric examination of amniotic fluid obtained by transabdominal amniocentesis of immunized Rh-negative women has increased significantly the accuracy of predicting those erythroblastotic fetuses who are in danger of intrauterine demise. Normally, amniotic fluid shows a gradual rise in optical density over the wavelength range from 700 μ to 350 μ. A characteristic "hump" between 525 μ and 375 μ with a peak at 450 μ is seen in affected fetuses. Initial amniocentesis may be performed as early as 22 weeks and, where significant deviation from normal is found, studies are repeated at 2 to 3 week intervals. Although the degree of deviation from normal is roughly proportional to severity of disease, the curves are interpreted in terms of 3 zones. Small
deviations (Zone I) indicate an unaffected or mildly affected infant. Marked deviations (Zone III) indicate severe disease and impending death. When the peak deviation at 450 μm is moderate (Zone II), the degree of severity is indeterminate, but the infant will be born alive and nonhydroptic. Delivery before 34½ weeks where amniocentesis revealed high Zone II or Zone III curves resulted in 73 per cent survival among 35 infants whose survival otherwise might have been nil.—J. B. S.


Perinatal mortality from erythroblastosis was decreased from 22 to 9 per cent after the introduction of amniocentesis and amniotic fluid examination. Amniocentesis was carried out in all women whose anti-D, anti-Kell or anti-c antibody titers exceeded 8. In order to decrease stillbirth mortality before 34 weeks gestation, a technic for peritoneal transfusion of severely affected fetuses was devised. Soluble radio-opaque material was injected into the amniotic sac and was swallowed by the fetus. Roentgenograms defined the area of the fetal peritoneal cavity free of solid viscera. A 16-gauge epidural needle was directed into the fetal peritoneal cavity, position was checked by injection of dye and an epidural catheter was fed through the needle. Fresh 0. Rh-negative packed red cells were injected. Further evaluation of amniotic fluid optical density was valueless after transfusion. Infants were delivered, where possible, at 34 to 35½ weeks. Except for occasional premature labor, there was no significant morbidity but for one infant where transfusion was directed into the left hemithorax. Of 31 infants transferred, all 13 who were hydropic at the time of treatment died; 11 of the other 18 survived.—J. B. S.


Using red cells from various primate and non-primate species, the authors have demonstrated that autoantibodies from cases of hemolytic anemia react with red cells containing the rhesus molecule and do not react with cells which lack the factor. These findings confirm and extend earlier reports of anti-c specificity for some of these antibodies and the observation that such antibodies do not react with human red cells lacking any rhesus factors. Rh null blood.—C. R. M.


The in vivo intrasplenic cloning method in irradiated mice was used for the study of the effect of erythropoietin on stem cells. It was found that an injection of anemic plasma reversed the specific suppression of erythroid clones caused by polycythemia. The kinetics of this reversal suggested that erythropoietin acts on stem cells already committed to become erythroid cells, rather than on uncommitted multipotent stem cells.—A. J. E.


An electron microscopic study was made of the wave of red cell formation induced by erythropoietin in the spleens of hypoxia-induced polycythemic mice which initially had markedly inhibited erythropoiesis. As early as 12 to 24 hours after erythropoietin administration, proerythroblasts contained granules of ferritin arranged into a lattice of hemosiderin. There was, however, no morphologic evidence for iron uptake in these cells.—O. P. J.


The newborn of mother rats who had been kept under simulated high altitude conditions of 18,000 feet during pregnancy were studied. The hematopoietic system of the newborn rat was sensitive to low oxygen tensions, except for the white blood cell line which was not affected appreciably. The mechanism which affected the hematopoietic system in the newborn rat was an erythropoietic stimulant which had no effect on leukocytes. Since the results were obtained with newborn rats no older than 6 hours, the effect had to take place in the fetal state.—O. P. J.

In order to evaluate the usefulness of the small subhuman primate, *Tamarins nigricollis*, for studies of red cell production, a number of basic erythropoietin studies were performed. Tamarins were found to respond to endogenous and exogenous erythropoietin in about the same manner as did mice, rats and rabbits. Nephrectomized Tamarins had severely curtailed production of erythropoietin, but acute exposure to hypoxia seemed to generate significant amounts of erythropoietin. The conclusion was that the Tamarin showed promise as an economical laboratory animal for erythropoietin studies.—A. J. E.


A normal hemogram did not necessarily constitute evidence of normal erythropoietic competence in the turtle. Starvation exerted little influence on the peripheral blood picture, but subjection to starvation for 6 weeks before bleeding prevented the increase in benzidine-staining and radioiron-labeled erythroblasts evoked by hemorrhage in normal turtles. The inability of some earlier workers to detect changes in erythropoiesis in lower vertebrates following application of stimuli effective in mammals may have been a consequence of an inadequate nutritional state in the animals at the time of the experiments.—O. P. J.


Study of the kinetics of endogenous and exogenous erythropoietin revealed that, in a rat, erythropoietin disappears in an exponential fashion with a velocity constant of 0.32. This value indicated a half disappearance time of about an hour and suggested that the erythropoietin present in one milliliter of plasma equals 1/100 of the total erythropoietin formed in the rat during 24 hours. It may also explain the inability to measure erythropoietin under normal conditions. The sensitivity of the mouse assay was usually limited to erythropoietin concentrations above 0.03 units per milliliter of plasma, corresponding to a daily total of more than 3 units. Normal red cell production appeared to be maintained by as little as 1.5 units per 24 hours, 1/100 of which could not be demonstrated by present assay methods.—A. J. E.


Another modification of cellulose acetate hemoglobin electrophoresis consists of alterations in the TRIS buffer (pH 8.8), in applying the hemoglobin solution on the cathodic side of the midline and in the clearing and scanning technic. There appears to be excellent separation of A2 and F hemoglobin, both from A1 and from carbonic anhydrases I and II. The normal range for A2 in 30 normal subjects (1.52–3.40 per cent) did not overlap the values found in 7 patients with thalassemia minor (4.4–6.3).—C. R. M.


By using pH 8.1 Tris-EDTA buffer on the paper strip and pH 9.0 boric acid–NaOH buffer for the electrodes, the authors have been able to separate hemoglobins A and F. The time is critical, usually about 4½–5 hours, and frequent observation is needed to detect narrowing of the bands and, therefore, sharpening of the separation.—C. R. M.


The authors investigated the content of porphyrins and their precursors in the erythrocytes and urine of patients with various forms of anemia. Porphyrin biosynthesis was markedly increased in hemolytic anemias. Protoporphyrin synthesis was increased in iron deficiency anemia and was reduced somewhat in infectious-toxic anemias. A marked disturbance of porphyrin biosynthesis was noted in lead intoxication. The activity of heme-synthetase in the liver of rats with lead intoxica-
tion was investigated. Peculiarities of porphyrin metabolism in ovalocytosis were studied.—J. K.


A suspension of red cells (concentration not stated) is dialysed against distilled water and the preparation is positioned in a Spincoc Analytrol so that a continuous recording is obtained until hemolysis is complete. Apparently, the procedure is capable of detecting quite small changes in fragility, but further work is in progress.—C. R. M.


There is a diurnal variation in the venous hematocrit and, if correction is made for this, Gr−1 red cell survival studies show less fluctuation and the results can be extrapolated with greater confidence.—C. R. M.

HEMOSTASIS


In normal hemostasis, the clot is destroyed by proteolytic enzymes; this is fibrinolysis. Fibrinolysis is seldom encountered in cancer, but some cases may show clear-cut features. The physiopathology of the hemorrhagic syndrome is well known. Under the influence of fibrinolytic enzymes, plasma fibrin and fibrinogen are destroyed; the polypeptide fragments still carry the antigenic pattern of fibrinogen and interfere with fibrin polymerization. The fibrinolytic enzymes also attack coagulation factors, especially Factors V and VIII. From the clinical point of view, four possibilities are to be considered. (1) The clinical features of defibrination are dramatic and often end fatally, despite modern therapy. (2) The subacute picture with extensive ecchymoses as the major characteristic has severe hemorrhages which are resistant to conventional treatment. (3) The clinical picture sometimes consists of purpura, nosebleeds and bleeding gums. (4) In some cases, fibrinolysis is incipient and becomes manifest during surgery, etc. The diagnosis is not simple because the tests available are too crude and because fibrinolytic activity is so evanescent. The pathogenesis may be obscure. In cancer of the prostate, fibrinolysis has been demonstrated. In acute leukemia, symptoms of fibrinolysis may indicate promyelocytic leukemia and may occur in some cases of monoblastic leukemia. In some cases, there may be consumption of fibrinogen by intravascular coagulation. Apart from symptomatic treatment, powerful antifibrinolytic agents are available. E-amino-caproic acid is mainly an antithrombin and the Kunitz inhibitor and the parotid inhibitor are powerful antiproteases. In defibrination, small doses of heparin have caused spectacular improvement. It has been suggested that tumor cells are more invasive with greater proteolytic and fibrinolytic capacity. Anti-proteases, however, are believed to be increased in subjects with epithelial carcinoma, if the process is slowly progressive.—G. M.


The euglobulin lysis time which reflects primarily plasminogen activation, fibrinogen levels and serial thrombin times which reflect a combination of fibrinolysis, fibrinogenopenia and anti-thrombin activity were used. In normal individuals and in patients with Lennec's and postnecrotic cirrhosis, intravenous nicotinic acid produced a marked reduction in euglobulin lysis time. The S.T.T.'s in cirrhotic patients were consistently and significantly higher than in normals. Anti-protease activity was increased by nicotinic acid, and the pathogenesis may be obscure. The findings were correlated with the observation that epsilon aminocaproic acid affects euglobulin lysis time, but not S.T.T.—C. R. M.


The authors examined the fibrinolytic activity of the blood of patients with hemorrhagic diatheses caused by accelerated fibrinolysis. In 15 patients. 200 hemorrhages were due to accelerated fibrin-
olysis. Arrest of hemorrhage and normalization of fibrinolytic activity was obtained with the aid of fresh citrated blood, plasma fibrinogen transfusions, corticosteroid hormones and E-aminocaproic acid.—J. K.


The trans form of aminomethylcyclohexane carboxylic acid (t-AMCHA) originally reported by Okamoto inhibited the activity of plasminogen, tissue activator and urine activator. The potency was 2 to 10 times that of EAMCHA. A marked therapeutic effect was observed in 2, a moderate effect in 8, an uncertain effect in 5 and there was no effect in 2.—K. F.


The author discusses in detail the technics, practical problems and interpretations of this test and the way in which it can be used to differentiate hemophilia A and B from each other and from thrombocytopenia.—C. R. M.


Visual platelet-counts using phase microscopy are subject to an error of about 11 per cent. A technic which gives a 4 per cent error and which permits a large number of samples to be counted requires the use of a Model B Coulter Counter, scrupulous cleanliness of the instrument and preliminary sedimentation of the blood, followed by centrifugation and correction in relation to the hematocrit to allow for trapped platelet-free plasma. If polyvinylpyrrolidone is added to the blood initially, correction is unnecessary. The original article should be consulted for a full discussion of the factors involved, but it still remains true that accurate platelet counts are not easy.—C. R. M.


Standardization of platelets by a turbidimetric method employed triply washed suspensions of platelets which were first adjusted to an arbitrary “normal” concentration and were then diluted 1/5. A linear relationship between transmittance and concentration over the working range was observed. The use of standardized platelet suspensions had obvious advantages and a dilute suspension made the test more sensitive to minor defects in platelet function.—C. R. M.


Thrombocytopenia due to lipopolysaccharide may not be caused primarily by thrombin. The alteration could not be attributed to an anticoagulant activity of LMD. Additional evidence for a distinction between the activity of lipopolysaccharide in causing platelet aggregation and/or destruction in vivo and in causing explosive amine release has been provided.—O. P. J.


Phagocytosis by platelets seems to be a fairly widespread phenomenon. Antigen-antibody complexes are phagocytized by platelets and there are reports of virus particles inside platelets. The results of electron microscope studies of mixtures of platelet rich plasma and latex particles (average diameter 0.34 μ) or colloidal carbon are presented. Phagocytosis by platelets of latex particles resembles the reaction between latex and leukocytes and is sensitive to metabolic inhibition. White cells and platelets have their phagocytosis and aggregation properties inhibited by EDTA. Divalent cations may be necessary for the reaction. In the studies
with latex particles, polymorphonuclear leukocytes and monocytes were found containing platelets, but it was not determined whether white cells preferentially phagocytize platelets which have themselves taken up some particulate matter. Platelet phagocytosis may be important in the organism’s defense mechanism.—O. P. J.


The micro-Mallory technic was modified so that the three major components of thrombi could be distinguished by staining fibrin red, platelets blue and erythrocytes yellow. A rabbit anti-human-platelet globulin was produced for use in an immunofluorescence technic. With this method, the retention of a platelet’s antigenic identity long after a thrombotic episode has occurred may be shown.—O. P. J.


In glutaraldehyde-fixed thrombocytes from human and rat blood, microtubules arranged in marginal bundles similar to those found in nucleated erythrocytes were described. Marginal bundles may play a role in maintaining the discoid shape of the circulating thrombocyte by providing a tubular cytoskeleton. An early step in platelet aggregation may be a disorganization of the marginal bundle, permitting the platelet to assume a spherical shape and to undergo pseudopod formation.—O. P. J.

**LEUKOCYTES**


Nine children (7 first cousins and 2 second cousins) who had a disease simulating chronic myelogenous leukemia were described. Onset occurred between 5 months and 4 years and was characterized by frequent respiratory tract infections, lethargy, pallor, hemorrhagic symptoms and a pro-\textit{\textregistered}uberant abdomen. Physical examination revealed small stature early in the disease, pallor and hepatosplenomegaly. Anemia, reticulocytosis. leukocyte counts of 28–128,000 and low platelet counts were present. Peripheral blood smears revealed a shift to the left in the granulocyte series with occasional blasts and nucleated red cells. Bone marrow examination revealed abundant megakaryocytes, normoblastic erythroid hyperplasia and marked myeloid hyperplasia with a shift to the left and with a mild to moderate increase in blasts. Microscopic examination of liver and spleen revealed extra-medullary hemopoiesis, but no cellular infiltration suggestive of leukemia. The leukocyte alkaline phosphatase was very low in all patients and in all but 2 of 20 relatives who were studied. Peripheral blood karyotypes were normal, except for an increased number of aneuploid cells. Three patients had an acute onset which rapidly progressed to death. At least two have gradually and completely recovered by adolescence.—J. B. S.

**ACUTE APPENDICITIS IN CHILDHOOD LEUKEMIA. W. Johnson and L. Borella. From St. Jude Hospital, Memphis, Tenn. J. Pediat. 67:595–599. 1965.**

Acute appendicitis was found in 6 of 22 consecutive autopsies of children with acute leukemia! In only two was the diagnosis suspected ante-mortem. All 6 patients had terminal sepsis due to infection with \textit{Pseudomonas} or \textit{E. coli} and 4 had signs of 6-mercaptopurine toxicity in the month prior to death.—J. B. S.

**URINARY COPROPORPHYRIN EXCRETION IN CHILDHOOD ACUTE LEUKEMIA. F. L. Lottsfeldt, V. Betlach and W. Krivit. From the University of Minnesota Medical School. Minneapolis, Minn. J. Pediat. 67:497–499. 1965.**

Although many children with acute leukemia had elevated urinary coproporphyrin levels, there was no correlation between the rate of excretion and disease activity, except in critically ill patients whose levels were usually high. There was no correlation between coproporphyrin excretion and the patient’s hemoglobin, leukocyte count or type of chemotherapy.—J. B. S.

There has been only one previous attempt to determine the distribution of nuclear antigens in human leukocytes by performing fluorescent antibody tests with human antinuclear sera. Since this serum has not been characterized fully, it was decided to investigate the distribution of antigens in nuclei of normal and leukemic leukocytes by fluorescent antibody studies with selected human antinuclear sera containing characterized antinuclear antibodies of 4 types. The "homogeneous" (DNA-protein) and "membranous" (DNA) antigens were detected in all leukocyte nuclei. The "speckled" antigen, a soluble protein in the nucleus, was absent from all normal polymorphonuclear leukocytes and from a proportion of polymorphonuclear leukocytes of patients with myeloid leukemia, but it was present in other types of leukocytes. The "nuclear" antigen was absent from all normal and leukemic polymorphs, many myeloid leukemic stab cells and a small proportion of normal lymphocytes, but it was present in all other leukocytes. Antinucleolar antibodies were proved to be sensitive and specific reagents for the detection of nucleoli in leukocytes.—O. P. J.


The technic of photohemagglutinin (PHA) culture of peripheral human leukocytes as described by Mosheid et al. yields virtually 100 per cent successful cultures, but attempts to apply this technic directly to animal blood have failed. The most significant feature reported in this paper is the apparent "toxicity" in PHA culture of homologous or even autologous rat plasma to rat lymphocytes, whether the latter were obtained from blood or lymphoid tissue. The necessity to wash the cells to obtain successful cultures must surely reflect the removal of this "toxic plasma" from the cell surface. This toxic factor is not in rat serum and it seems to be specific for rat lymphocytes in PHA culture.—O. P. J.


There appears to be a minor impairment of respiratory function in the leukocytes from iron deficient patients which may be due to an intracellular deficiency of cytochrome c. This phenomenon does not occur when the cells are homogenized and cytochrome c is added to the medium. Under these circumstances, "anemic" leukocytes show a greater respiratory activity than normal leukocytes.—O. P. J.


Infection with D. congolensis after treatment with nitrogen mustard has indicated that the resistance of normal rabbits to the infection of scarified skin depends entirely on the availability of circulating granulocytes for infiltration of the infected region. The resistance is due partly to the phagocytosis of zoospores during the first 3 hours of infection and partly to the rapid formation of a dense layer of granulocytes beneath the scarification through which hyphae from zoospores that escape phagocytosis cannot penetrate.—O. P. J.


With electron microscopy, it was observed that ferritin was taken up in pinocytotic vesicles by reticular cells. No antigen was observed in lymphocytes or in immature or mature plasma cells after primary and secondary stimulation or after hyperstimulation. Using fluorescent antibody staining, no antigenic material was detectable in the antibody producing plasma cell. If antigen fragments not identifiable in electron microscopy are present, they are in a form not available for antibody staining.—O. P. J.


Macrophages, usually derived from the peritoneum, have been studied extensively in tissue culture. Comparison of cells from different sources in the body has led to their division into 3 groups. Group 1 consists of macrophages from blood and peritoneal cavity which spread rapidly in culture,
but have a low mitotic rate. Group 2 cells from bone marrow, spleen and liver spread slowly, but have a high mitotic rate. Group 1 cells may be derived from Group 2. The third group comprises macrophages from lung which spread rapidly and have a high mitotic rate. In addition, the cytoplasm is intensely pyroninophilic and the cells can concentrate gamma-globulin, in contrast to peritoneal macrophages.—C. R. M.

Electron microscopic and histochemical studies of 19 patients with multiple myeloma revealed flaming cells in 3, all of the B₃M (IgM) type. The flaming cell and the thesaurocyte may be variations of the same cell. The cell may owe its staining characteristics to storage of large quantities of glycoprotein. The myeloma cells in such cases apparently produce a protein with a high carbohydrate content.—C. R. M.

MISCELLANEOUS


Exchange transfusion of healthy prematures infants with serum bilirubin levels below 24 mg. per cent would appear to be unnecessary. The presence of asphyxia, sepsis, hypoproteinemia, acidosis or other illness, however, probably increases susceptibility to kernicterus. The criteria to be used when evaluating the need for “exchanging” sick prematures are unclear. Gartner and Bernstein (Bull. Jew. Mem. Hospital 10:125, 1965) recently described two premature infants who died with kernicterus and whose serum bilirubin levels had remained below 15 mg. per cent. Both infants had suffered significant hypoxia and one also had sepsis. —J. B. S.


The infant daughter of a woman with erythropoietic porphyria demonstrated severe purple-red staining and intense fluorescence of her teeth. There was no other clinical or laboratory evidence of disease. It was suggested that the erythropoietic porphyria resulted from transplacentally acquired transient porphyria.—J. B. S.

Improvement in the clinical course, renal function and morphology were noted in two adolescents treated with adrenocortical steroids for prolonged periods.—J. B. S.


A girl with hepatosplenomegaly since early infancy was described. Numerous large storage cells were found on repeated bone marrow aspirations. The cells were of two types. In type I cells, the eccentric nuclei contained multiple nucleoli and the cytoplasm contained numerous blue granules. The type II cell was agranular and the cytoplasm had a vacuolated foamy appearance. Erythrophagocytosis was seen in both cell types. The granules were PAS-positive and studies suggested that the granular material was a glycolipid or phospholipid. Minimal labeling with tritiated thymidine, leucine and uridine suggested that the cells were relatively inactive and were functioning as storage cells. Little effect on the child's general health was noted.—J. B. S.


A systematic study of 500 subjects above the age of 68 revealed 15 cases of "narrow band" serum dysglobulinemia with no clinical, cytologic or radiologic evidence of myeloma or Waldenstrom's macroglobulinaemia.—H. H. F.


A series of experiments in human volunteers provided suggestive evidence that erythrocyte group antigens may, on suitable immunization of recipients, play a significant part in conditioning the response of these subjects to first-set homografts.—P. B.


A man suffering from hyperlipemia was found to have an autoantibody against ß-lipoprotein. In a previously reported case, the same finding was observed in a subject who also had a γ myeloma. The two autoantibodies were reduced in the presence of ß-lipoprotein, even when isolated from the subjects' own serum and could be eluted from the complex. The author concluded that the metabolism of ß-lipoprotein was abnormal and that this might be a possible explanation for the pathogenesis of atherosclerosis.—J. C.


Penicillin antibodies have been demonstrated free in the serum and coating red cells. Four cases are described in which a positive direct Coombs test was due to massive penicillin dosage. Apparently, penicillin readily coats red cells, if the concentration is high enough, and circulating antibody can then attach to the cells. The phenomenon is not so ill Ortant of itself, but it may be a source of confusion in a patient with hemolytic anemia.—C. R. M.


After 10 generations of x-irradiation, an irradiated sub-line was started and continued with no further x-ray exposure. Irradiated sub-line mice reported here were unirradiated second litter male and female offspring from 10 generations of x-irradiated males followed by 10 generations with no x-ray exposure (F1 sub-line) and their second litter virgin daughters (F2 sub-line). Statements crediting reduction of lifespan as a measure of radiation-induced genetic decrement in viability are premature and inconsistent with experimental evidence to date.—H. H. F.