HEMOSTASIS


The most frequently found abnormality was depression of thromboplastin formation, the degree of impairment being greatest in patients with the highest hemoglobin levels. Abnormal thromboplastin generation was found in patients with cor pulmonale, but not in those with polycythemia vera. Cyanotic patients also tended to have fibrinogen deficiency and thrombocytopenia. No single coagulation factor appeared to be responsible for the depression of thromboplastin generation. The thromboplastin generation test was thought to be useful in predicting the occurrence of postoperative bleeding.—P. B.


Cessation of hematuria was observed in three hemophiliacs after 6 to 48 hours therapy with intravenous hydrocortisone, 50 mg. every 8 hours, or oral prednisone, 20–25 mg. every 6 hours, for 1 to 4 days. The patients were ambulated within 48 hours after gross hematuria subsided without recurrence of bleeding.—J. B. S.


Isolated Factor X deficiency in a 65-year-old woman, probably suffering from primary amyloidosis, was associated with cutaneous and mucosal bleeding. The prothrombin time was prolonged (46/12 sec.), but intrinsic thromboplastin formation was only slightly retarded. Circulating anticoagulant could not be detected. Transfusion of large amounts of fresh plasma did not correct the coagulation defect.—E. A. L.


Thrombocyte-agglutinating activity of plasma (Tag), studied in man, dog and pig, was com-
pared with the effect of ADP. Either Ca\(^{++}\) or Mg\(^{++}\) was needed for both reactions and both were completely inhibited by EDTA. TAg was most effective in dog and least in man, while ADP was active with human and canine platelets, but not with porcine. TAg and ADP showed a synergic effect in these species, especially in pig. TAg was in the fibrinogen fraction. Electron micrographs showed that both processes left intact-looking platelets, indicating that the mechanism involved was probably different from that in the platelet agglutinating effect of thrombin. Thrombin was potent, but resulted in marked destruction of platelets and was inhibited by heparin which had no effect on TAg or ADP action. —C. R. M.


To improve the detection of antplatelet antibodies by the antiglobulin consumption test, the system uses an immunological couple: Bacillus cereus and a complement-binding antibody directed against this bacterium. B. cereus can fix part of its body on the wall of human erythrocytes. The antibody, present in the serum of most normal human adults, consumes complement and reacts only with the anti-non-gamma fractions of an antiglobulin serum. The test is made in 3 steps: fixation of an antigen belonging to B. cereus on red cells; reaction of the antibody with this antigen; consumption of complement by the antigen-antibody complex. The prepared erythrocytes are agglutinated only by a Coombs serum having anti-non-gamma reagents and permit detection of non-gamma globulin antibodies. —G. M.


The venom of the Japanese snake, Mamushi, has two hemorrhagic proteins, one of which is identical with proteinase b. Proteinase b was purified by column chromatography on anion exchange cellulose derivatives. Sephadex and hydroxyapatite with a yield from lyophilized crude venom of 2.5 per cent. The purified preparation appeared to be chromatographically and electrophoretically homogeneous. The hemorrhagic activity of the venom may be due to proteinase b. For these two activities could not be separated by chromatography. The purified proteinase b was an acidic protein with a sedimentation constant \(S_{20} = 4.82 \times 10^{-13}\). —K. F.


Following heparin administration, these barriers became more permeable to P\(^{32}\) and penicillin. P\(^{32}\) activity was higher in the nervous system of animals pretreated with heparin than in controls, and the uptake of P\(^{32}\) due to heparin was highest in the hypophysis, cortex and hypothalamus. P\(^{32}\) uptake was also increased in liver, kidney, spleen, testicles and ovaries. Following penicillin administration, its concentration increased in the brain, cerebrospinal fluid and vitreous humor of animals pretreated with heparin. The penicillin content of blood of animals was inhibited by heparin.
treated with heparin was lower than that of controls.—S. R. H.

**ABSTRACTS**


The standard wire loop prothrombin time and partial thromboplastin time tests were compared with a commercial automated machine. Important aspects of the machine were: automatic delivery pipet, automatic timer activation when plasma was delivered, automatic end point reading and disposable tubes and plastic tips. Macro and micro technics were evaluated and both gave satisfactory standard deviations on the basis of at least 200 duplicate estimations of both prothrombin and partial thromboplastin times. As long as necessary precautions were taken, the machine was satisfactory and it required only about ½ hour of instruction for technologists already skilled in the wire loop technic.—C. R. M.


Another analysis of the “fibrometer” with a much smaller sample led the authors to conclude that it was a satisfactory technic for the prothrombin time, but partial thromboplastin times were not evaluated. The cost per test was about ½ lower with the instrument. If the collection cost was included, the difference would be less marked.—C. R. M.

**LEUKOCYTES**


Most marrow stem cells are probably in a resting state, as far as DNA synthesis is concerned. To label stem cells with tritiated thymidine, the majority of these cells must be induced to leave the “resting state.” Dogs, given near-lethal doses of nitrogen mustard, developed marrow hypoplasia and those that survived showed a very rapid recovery of marrow function after the sixth day, suggesting the presence of relatively undamaged stem cells in the marrow during the period of hypoplasia. In contrast, irradiation appeared to damage the stem cell population with slow recovery of marrow function after a near-lethal dose. To identify the stem cell morphologically, serial marrow aspirations were performed during 8 days after nitrogen mustard. Autoradiograms were prepared after incubation of aspirated marrow with tritiated thymidine. On the third day, the predominant cell was a heavily labeled small cell with dense nuclear chromatin and it resembled the lymphocyte. On the fifth day, the predominant labeled cell was large and similar to the classical hemocytoblast. On subsequent days, there was rapid development of the usual myeloid and erythroid precursors. The authors thought that the labeled “lymphoid” cells were precursors of the hemocytoblast stage and that a cell indistinguishable from the lymphocyte was able to function as a pluripotential marrow stem cell.—T. E. B.


Particle-free extracts of thymic tissue, obtained from either mice, rats or calves, were injected intraperitoneally into mice. The extracts were found to induce enhanced incorporation of tritiated thymidine into nucleic acids and of glycine-2-C14 into total protein of lymph nodes. Significantly increased lymph node weight was also noted. Bovine serum albumin and extracts of rat lymph nodes and spleen were without effect. It was suggested that the effects of thymic extracts on lymph node proliferation were due to a thymic lymphocytopoietic factor. The assay method described should be useful for studying the activity of thymic extracts in promoting lymphocyte proliferation.—T. E. B.

ABSTRACTS

The extract may be related to leukopoietin. In intact mice, single doses (at least 12 μg. per Gm.) induced up to a 30-fold increase in circulating granulocytes within 3 to 7 hours of intravenous injection.—T. E. B.


The administration of ethionine resulted in a transitory decrease in total leukocyte count, circulating lymphocytes and reticulocytes, in increased mitosis and plasma cells in lymphoid tissues, atypical lymphocytes in lymph nodes and peripheral blood, increased hemosiderin in the spleen, anisocytosis and hypochromia of circulating erythrocytes, increased fat in bone marrow correlated with decreased cellular elements and a general disorganization of lymphoid organs.

—G. M.


H²-thymidine was given before, simultaneously or after placing coverslips on denuded skin windows in rats. Only when thymidine was given 1 day before placing the coverslip was there a high percentage of labeled macrophages. Mitotic figures were not seen and these observations suggested that the macrophages were derived from an actively dividing precursor cell in blood. Since the extent of labeling of small lymphocytes in blood was never more than 1–2 per cent, the authors concluded that the small lymphocyte could not be the precursor cell.—I. G.


Splenectomy, thymectomy or thoracic duct drainage did not alter the number of macrophages appearing on skin window coverslips, but 750 rads prevented their appearance. Bone marrow shielding during irradiation restored macrophage emigration to normal. Radioactively labeled lymphocytes from thoracic duct lymph, thymus, spleen and bone marrow were given to syngeneic recipients. Only in those recipients given cells from bone marrow or spleen were labeled macrophages seen on coverslips. The authors concluded that bone marrow and spleen were the major sources of macrophages in these experiments.—I. G.


After stressing the importance of Shelley's test to the allergist, the authors describe the technic, point out the possible causes of error and define the conditions for this method. Detailed morphological descriptions of the process of degranulation on direct examination and by micro-cinematographic study are given. This test seems relevant for powerful antigens like penicillin, but its lack of specificity and the technical difficulties limit its use to special cases.—G. M.


The effectiveness of prednisone therapy in 46 children with untreated disease and 41 children in relapse after previous steroid therapy was studied. The dosage was 2.2 mg./Kg. daily, to a maximum of 60 mg., in 4 divided doses for up to 6 weeks in the initial treatment group and 4 weeks in the group receiving steroids for the second time. Results with all cases included, regardless of duration of treatment, were: Initial Treatment: complete, 26 per cent (57 days); partial, 33 (29 days); none, 41. Repeat Treatment: complete, 24 per cent (43 days); partial, 22 (28 days); none, 54. Onset of remission, partial or complete, occurred in each group after approximately 4 weeks of treatment.—J. B. S.


At 3 weeks of age, the modal chromosome
ABSTRACTS

count was 47 with trisomy-21. A minor cell line with 48 chromosomes was also found with the additional chromosome in group 6-12. Leukemia remitted spontaneously and at 5 months the bone marrow smear was essentially normal. During remission, some leukocytes cultured from blood exhibited one or two deleted small acrocentric chromosomes. At 2 years, he was again in relapse and the modal count of marrow cells was 48, while the karyotype of cultured peripheral blood leukocytes grown in phytohemagglutinin revealed a modal count of 47. Cells obtained from skin, thymus, lung and spleen at post-mortem contained only 47 chromosomes.—J. B. S.


The amount of erythrocyte H-substance was estimated by measuring the per cent agglutinability by anti-H reagent from Ulex europaeus (containing 450,000 "N22 units") in 23 normals, 19 patients with various nonleukemia diseases and 41 patients with acute leukemia, all of blood-group O. In the control sample, agglutinability ranged from 71 to 95 per cent with a mean value of 86. All of the nonleukemic patients had values higher than 86. The percentage of agglutinability in 8 leukemic patients was lower than 66. A similar phenomenon has been described in acute leukemia with A or B antigens. The phenotypic abnormalities of ABH substance observed in acute leukemia may involve the terminal stages of genetic activity in synthesis of specific substance.—G. M.

ACTIVE TUBERCULOSIS IN LEUKAEMIA, MALIGNANT LYMPHOMA AND MYELOFIBROBROSIS. L. B. Morrow and R. E. Anderson. From University of New Mexico School of Medicine, Albuquerque, N. M. Arch. Path. (Chicago) 79:484-493, 1965.

Continuing the analysis of survivors of the Hiroshima atomic bomb, the authors found an increased incidence of active tuberculosis only in chronic myelogenous leukemia and myelofibrosis. The increase was directly proportional to the apparent duration of the disease and was not related to any treatment, except, possibly, therapeutic x-ray. There was no increase in frequency in cases of acute leukemia or "malignant lymphoma" in broader terms. The authors suggested that this difference may explain the apparent discrepancies in published series where no separation was made of the underlying disease types. One striking difference was that 6/15 proximally exposed people with chronic myelogenous leukemia had active tuberculosis, whereas 0/11 distally exposed were infected. This relationship between tuberculosis and exposure status was not found elsewhere, suggesting a possible difference between radiation-induced and spontaneous myelogenous leukemia, although the numbers are rather smaller than one would like.—C. R. M.


Splenectomy, performed prior to treatment with 6-mercaptopurine, did not change the tolerance of mice to the drug when it was given at doses which depressed immune responses. —G. M.

ERYTHROCYTES


A prematurely born moribund hydropic infant was delivered of a nonimmunized Filipino mother. Examination of the placenta and the infant's tissues revealed changes indistinguishable from erythroblastosis fetalis. Studies of the parents and their 2 living children revealed hypochromic microcyto with target and oval cells. Hemoglobins A and F were not elevated and there was no Bart's or H hemoglobin. Unfortunately, hemoglobin electrophoresis was not performed on the infant's blood; presumably, hemoglobin Bart's would have been found.—J. B. S.


During routine screening in Ibadan, Nigeria,
the hemoglobin of a member of the Yoruba tribe showed, on paper electrophoresis at alkaline pH, a single band which was indistinguishable from hemoglobin of a member of the Yoruba tribe. The propositus, clinically well, had a positive sickling test, but appeared hematologically normal. On agar-gel electrophoresis at pH 8.6, the hemoglobin separated into two fractions: a smaller component in the position of Hb-S and a larger component (70 per cent) in the position of Hb-A. The latter component was, therefore, considered to be Hb-D. Analysis showed it to have the formula $\alpha_2\beta_2^{\text{At}}\sum^\text{12s}$ and it was named Dβ Ibadan. It was thought to be the first example of a fully investigated mutation in the core. Although an additional polar group is introduced near the heme-linked histidine, no interference with the function of heme was noted, presumably because this polar group does not point in the direction of the ferrous atom.—P. B.


An 8-month-old Negro boy presented with the characteristic clinical picture of the hand-foot syndrome seen in infants with sickle cell disease, but no hemoglobin abnormality was present. Blood cultures were positive for β-hemolytic streptococci. X-rays of hands and feet were negative on admission, except for soft tissue swelling. Serial examinations demonstrated changes in the proximal phalanges of hands and feet characteristic of osteomyelitis. The fifth metatarsals of both feet were also involved.—J. B. S.


Using a positron camera and a positron emitting isotope, Fe$^{52}$, the authors were able to record the distribution of erythropoietic marrow in human subjects. Spectacular photographs, showing extension of marrow activity to elbow, knee and ankle in hemolytic anemia and almost total lack of activity in aplastic anemia, illustrate the article which should be consulted in toto.—R. O. W.


A clear, concise review in which some interesting figures are given: Total body iron in adults is 45 mg./Kg., including 12 ± 8 mg./Kg. storage iron; the newborn has 75 mg./Kg.; after hemorrhage, 25–50 mg./day can be mobilized from storage. The author concludes that, in view of the world-wide tendency to iron deficiency, an increase in "available" food iron to twice that now being ingested would be desirable. This goal could be accomplished by supplementing daily food with 10–15 mg. of iron salts.—R. O. W.
augmented intrinsic factor secretion. Maximal secretion was observed during the first 15 minutes of stimulation and preceded the maximal stimulation of acid and water.—F. A. K.


Gastrin I and II, in approximately equal proportions, stimulated secretion of intrinsic factor in man. Gastrin appeared to be 20 times more potent than histamine and the response was more prompt.—P. B.


Cholinergic drugs (carbachol, methacholine, Bethanecol) had no significant effect on the secretion of intrinsic factor in humans. Betazole (Histalog) was almost twice as potent as histamine in stimulating secretion of intrinsic factor, probably due to its more prolonged action.—P. B.


Blood folate activity in breast fed infants was significantly higher than in their nursing mothers and in a comparable group of artificially fed infants. Although cow’s milk is at least as rich in folates as breast milk, heat treatment results in loss of a considerable portion of folate activity.—F. A. K.


The concentration of erythrocyte-reduced glutathione was higher in the blood of 23 patients with megaloblastic anemia than in normal controls. The concentration was highest in the most severely anemic patients and returned to normal 3 to 4 weeks after the peak reticulocyte response.—F. A. K.


Interchange of erythrocyte and plasma phospholipids occurred rapidly (about 20 per cent of total amounts within 2 hours) during incubation at 37 C. The transfer of labeled, preformed phospholipids from the plasma phase to the erythrocyte membrane and vice versa occurred 100 times faster than the incorporation of inorganic P32 into membrane phosphatides. The phospholipids of mature erythrocytes may be metabolized in vivo predominantly through exchange with plasma phospholipids, rather than by synthesis and breakdown in situ. (Abstracter’s note: These results, coupled with those of Murphy. [J. Lab. Clin. Med. 60:571, 1962] showing rapid exchange of erythrocyte membrane and plasma cholesterol, indicate that membrane lipids are in states of rapid flux. The physiological significance of these observations is enigmatic, although these phenomena have been implicated in red cell cation transport and in the shape changes occurring during incubation in vitro.)—H. S. J.


Radioautographs of normal human erythrocytes containing tritiated cholesterol demonstrated a nonhomogeneous distribution of the isotope with increased concentrations in the convex periphery of the cell. The author proposed that the resulting difference in wettability and interfacial tension between the periphery and center (concavity) of the red cell was a primary cause of its discoidal shape. In contrast, isotopic cholesterol in ovalocytes was concentrated on the two lateral ends of the oval, a fact which may be correlated with the abnormal shape of these cells.—H. S. J.


Utilizing C14-adenine, the maintenance of higher levels of ATP and other adenine nucleotides in stored red cells supplemented with ade-
nine was shown to be due to increased synthesis, rather than decreased breakdown, of these nucleotides. The suggested biosynthetic pathway involved the formation of AMP from adenosine and 5-phosphoribosyl-1-pyrophosphate by AMP pyrophosphorylase.—H. S. J.


Erythrocytes from 50 normal subjects were analyzed for these minerals. Normal values, probably the most accurate yet available, were given. Correction for trapped plasma was essential for sodium and calcium analyses and should be made for each blood sample, variations in packing of red cells from different donors being noted. Washing erythrocytes with magnesium chloride or choline-Tris buffer to free them of contaminating plasma prior to analysis resulted in loss of sodium and calcium. Anticoagulation with EDTA reduced cellular calcium levels.—H. S. J.


A phosphorylated substance which appears to be an intermediate in the ATPase system required for active cation transport in a variety of biological membranes was characterized after preparation from TCA-precipitable extracts of guinea pig kidney. The material was phosphorylated by ATP in the presence of sodium ion; potassium ion accelerated dephosphorylation. Ouabain interfered with these relationships. (Abstracter’s note: These findings suggest that the following sequence of chemical reactions is involved in ATPase-mediated active cation transport in membranes:

\[ X + ATP \xrightarrow{\text{Na}^+} X + ADP + P_i \]


\[ X + ADP \xrightarrow{\text{K}^+} X + P_i \]

Sum: ATP \xrightarrow{\text{X}} ADP + P_i

The overall reaction is an ATPase system and the existence of a postulated intermediate, X P, which from other data [Ahmed and Judah, Biochim. Biophys. Acta 93:603–613, 1964] is probably a lipoprotein, has now been verified.)—H. S. J.

MISCELLANEOUS


Injections of spleen cells of one strain of inbred mice were used to produce iso-antisera in another strain. These antisera were absorbed with tissues and subcellular fractions of tissues whose content of H-2 antigen was being investigated. The titer of H-2 antibody after absorption was assayed by cytotoxicity tests with normal or malignant lymphocytes of the strain used for immunization. The amount of antibody absorbed was a measure of H-2 antigen present in the tissue used for absorption. H-2 antigens were found closely associated with cellular surface membranes and membranes of the endoplasmic reticulum and lysosomes; mitochondrial membranes had no activity. Liver, spleen and kidney had the most H-2 antigen, erythrocytes had less and testicle, brain and muscle had none. All H-2 antigens of a given strain were expressed as a unit, suggesting that the controlling genes are arranged as a single cistron.—I. G.


Normal beagles (433) were studied for 10 years; 30 to 64 dogs were examined per year. The authors were able to separate environmental trends from those caused by aging. Mean leucocyte values did not change with age, whereas erythrocytes, measured by the volume of packed cells, showed a downward trend.—O. P. J.


In 51 atherosclerotic patients with angina pectoris, with or without myocardial infarction and
intermittent claudication, the vitamin A tolerance test and fasting lipedema were studied. In 14, blood vitamin A was very high after massive vitamin A absorption. This finding was not correlated with the lipoproteins, phospholipids or proteins, but was correlated with triglycerides and cholesterol, especially in patients with low cholesterol-triglyceride ratios. The authors assume that these results may indicate new ways of treatment for patients who may benefit from a low fat diet.—J. C.


Sixty patients with chronic acquired aplastic anemia were investigated during 12 years. The age range was 2 to 80, the sexes were equally affected, and 28 patients gave a history of exposure to a "toxic" agent (chloramphenicol in 8 and phenylbutazone in 4). The outlook was especially poor in patients over 40, but seemed less serious at puberty. Prognosis was not improved by the presence of foci of normal or hyperplastic marrow, nor by reticulocytosis. Patients were more likely to die from hemorrhage due to thrombocytopenia than from infection due to neutropenia. Prognosis was especially grave with profound neutropenia and severe thrombocytopenia. Half the patients died within 15 months of onset; 18 were still alive, but only 6 were in full remission. Invariably, platelets were the last to return to normal. Steroid and androgen therapy appeared to be of benefit in children near puberty, but seemed ineffective in adults. Fresh blood or platelet transfusions were valuable during hemorrhagic episodes. Splenectomy was performed in 4 patients with equivocal results. Occasionally, paroxysmal nocturnal hemoglobinuria may occur as a complication of aplastic anemia.—P. B.


The point-counting technic of Chalkley was used to determine the amount of hematopoietic tissue in iliac crest marrow. In the first decade, about 80 per cent of the marrow was hematopoietic tissue; by age 30 this had dropped to about 50 per cent and remained stable until age 70. Thereafter, a fairly sharp decline occurred. The amount of hematopoietic tissue was greater than that in ribs, but less than that in sternum.—C. R. M.


The D antigen, homogeneous in members of a family carrying identical chromosomes, is heterogeneous in the population. This heterogeneity is independent of the Rh genotype, i.e., whether homozygous or heterozygous for Rh0, and of the age of the subject.—H. H. F.


Blood cultures were frequently positive, especially when preexchange specimens were obtained from umbilical vein. The organisms found were usually identical to umbilical cord flora. There was no good correlation between positive blood cultures and the development of sepsis. No advantage of prophylactic antibiotic therapy was noted.—J. B. S.


A method for isolation of megakaryocytes in a suspension of rat marrow yielded a preparation which was pure, sterile and harmless. This method may be suitable for preservation of other giant cells in various biological media.—J. C.


Different groups of mice received I.P. injections of fluid BSA at varying dose schedules and for various time intervals. Several weeks after BSA injections were stopped, the mice were im-
munized with BSA in Freund's adjuvant. Antibody response to this latter immunization was measured by the Farr technic. High doses of BSA for a long time produced paralysis, but it was also found that very small amounts of BSA (10–40 \( \mu \)g, 30X/week) for only 2–3 weeks also produced paralysis. This paralysis was specific; the mice responded normally to another protein antigen. The author felt that the phenomenon of low dose paralysis was more in keeping with an elective theory of antibody formation, rather than the instructive theory.—I. G.


In 3 combinations of inbred hamsters, grafts of neonatal skin to adult animals lasted longer than grafts of adult skin. The most likely reason: neonatal skin did not elicit the same degree of immunity from recipient animals. It was observed that, in some adult animals bearing homografts of adult cheek pouch skin, neonatal skin homografts were permanently accepted. The authors had shown previously that cheek pouch skin homografts were permanently accepted by the host because they had a layer of loose connective tissue which impaired the egress of antigens. The authors concluded that the cheek pouch homografts leaked small amounts of antigen in such a way as to produce tolerance to the antigen present, rather than sensitization of the host.—I. G.


The amount, duration of administration, route of administration and physical state all affect the response of an animal to the antigen. The authors investigated the effect of "biologically filtering" antigen. \( ^{131} \)I-labeled BSA was injected into rabbits; 48 hours later the animals were bled, and their serum, containing filtered BSA-\( ^{131} \)I, was given to other rabbits (6–8 mg./animal). Five of 9 rabbits had no immune elimination of this antigen and 2 of 5 rabbits did not respond to subsequent injections of alum-precipitated BSA and were, therefore, considered tolerant. Control animals injected with the same amount of ordinary BSA all showed immune elimination between 7–12 days. The authors theorized that phagocytosis of antigen by macrophages is a crucial early step in the pathway leading to immunization. If the same antigen was presented after first reaching lymphocytes, tolerance was produced.—I. G.

**Abstract's Comment:** These 3 papers indicate that small amounts of antigen, either from skin grafts or in the form of purified protein presented in a certain way, may produce tolerance, rather than immunization. This finding may have clinical applications.


Proteins and amino acids were sensitized to indirect radiation injury with SH-inhibitors of different specificity and the extent of injury was determined by spectrophotometric and sedimentation studies. Experiments also were carried out under conditions in which the radiation effect was simulated by OH groups liberated from \( \text{H}_2\text{O}_2 \). The possible mechanisms were discussed. —S. R. H.


Immuno-diffusion and immuno-electrophoretic analysis were used. Labeling with chromium at alkaline pH did not influence the size, antigenicity and electrophoretic mobility of the protein molecules.—S. R. H.


Elevated serum glycoprotein levels have been found in experimental myocardial infarction and intestinal strangulation. The amount of glycoprotein was increased in necrosed heart muscle,
but not in strangulated intestinal loop. Sialic acid and hexosamine contents were determined in partially or completely strangulated rat abdominal muscle. No change was found in completely strangulated muscle, while partially strangulated tissue contained more glycoprotein than did intact muscle. It was suggested that elevation of serum glycoprotein levels was not due to tissue destruction, but resulted from increased synthetic activity of the reticuloendothelial system. The fact that an increase was not found in tissues completely devoid of circulation permitted the conclusion that mobile cells of the R-E system were responsible for local increases in glycoprotein levels.—S. R. H.

**Estimation of Antibodies Fixed to Cells (Sessile) by the Hapten Inhibition Method.** L. Kesztyűs, H. Cserményészky and M. Kárai. From the University Medical School, Debrecen, Hungary. Kisérő Orvostud. 16:600-607, 1964.

The hapten inhibition method of Landsteiner-Halban was used. 1³¹-Iodoovalbumin antigen and diiodotyrosine hapten, in increasing doses, were added to liver homogenates from rabbits immunized with iodoovalbumin and the maximal amount of antigen specifically fixed by the sessile antibodies was estimated.—S. R. H.


The phosphorylase inhibiting effect of organ homogenates of cocks previously immunized with rabbit muscle phosphorylase-b was estimated. The cell fixed antibody content of such organs may be very high.—S. R. H.