# Contents

**The Prothrombin Consumption Test: Its Clinical and Theoretic Implications**
Armand J. Quick and Jean E. Favre-Gilly 1281

**The Chain Reaction of the Blood Clotting Mechanism in Relation to the Theory of Hemostasis and Thrombosis**
J. H. Milzow 1290

**Hypoprothrombinemia: Studies of a Case of the Idiopathic Type and the Effect of Serum Administration**
Charles L. Crockett, Jr., Donald Shotton, Charles G. Craddock, Jr., and Byrd S. Leavell 1298

**The Effect of Artificial Surfaces on Blood Coagulability, with Special Reference to Polyethylene**
Thomas J. Donovan and Bernard Zimmermann 1310

**The Role of Staphylocoagulase in Blood Coagulation. II. Coagulation in the Absence of Calcium and in the Presence of Fluorides, Heparin, and Azo Dyes**
John B. Miale 1317

**The Determination of the Level of Leukocytes in the Blood Stream with Inflammation. A Thermostable Component Concerned in the Mechanism of Leukocytosis**
Valy Menkin 1323

**Experimental Thoracic Duct Fistula: Observations on Lymphocyte Output**
William W. L. Glenn, Francis X. Bauer and Samuel L. Cresson 1338

**The Effects of Roentgen Rays on the Inflammatory Cells of the Mouse and Rabbit**
William A. Townsend and Barry Campbell 1346

**A Preliminary Study of the Relationship Between Lactobacillus Lactis Dorrner Response and Clinical Anti-Pernicious Anemia Activity of Liver Extracts**
Wilfrid F. White, John R. Mote and Edwin E. Hays 1357

R. Wendell Davis, Richard M. Christian, Donald M. Ervin and Lawrence E. Young 1361

**Tuberculous Splenomegaly with the Hypersplenism Syndrome. A Case Report**
H. C. Meredith, Jr., J. Q. Early and Walter Becker 1367

**Abstracts** 1374
CONTENTS

No. 1

Results of Therapy of Erythroblastosis with Exchange Transfusions
*Alexander S. Wiener and Irving B. Wiexler* 1

Recent Studies of Multiple Myeloma: Sternal and Rib Puncture and the Results of Treatment with Stilbamidine
*Simon Propp, L. Whitington Gorham and Samuel Kantor* 36

The Distribution of Histochemically Demonstrable Glycogen in Human blood and Bone Marrow Cells
*Max Wachstein* 54

Pyridoxine Deficient Diet and Desoxypyridoxine in the Therapy of Lymphosarcoma and Acute Leukemia in Man
*Alfred Gelbhorn and Logan O. Jones* 60

A Rapid Diagnostic Test for Sickle Cell Anemia
*Harvey A. Itano and Linus Pauling* 66

The Mechanism of Petechial Hemorrhage Formation
*J. G. Humble* 69

Editorial: . . . And now B 12!
*William Dameshek* 76

Abstracts
79

News and Views: Condensation of the First Two Reports of the Committee for Clarification of the Nomenclature of Cells and Diseases of the Blood and Blood-forming Organs
89

No. 2

(His issue concluded the George Richards Minot Anniversary Volume, begun in January 1948.)

*Articles Dedicated to Dr. Minot*

Hemophilia. A Clinical Study of Forty Patients
*Charles S. Davidson, Robert D. Epstein, George F. Miller and F. H. L. Taylor* 97

Studies of an Undetermined Circulating Anticoagulant. Case Report and Laboratory Findings
*D. G. Dieter, M. Spooner and F. J. Pohle* 120

Familial Panmyelophthisis. Fanconi Syndrome in Adults
*Karl Rohr* 130

Extramedullary Blood Production
*Claus Munk Plum* 142

Bone Marrow Nutrition in Relation to the Phagocytic Activity of Blood Granulocytes
*Clarence A. Mills* 150

Some Observations on the Effect of Folic Acid Antagonists on Acute Leukemia and Other Forms of Incurable Cancer
*Sidney Farber* 160
CONTENTS

Other Articles
The Use of Folic Acid Antagonists in the Treatment of Acute and Subacute Leukemia. A Preliminary Statement .................. William Dameshek 168
The Distribution Curve of Erythrocyte Fragility. A Different Method of Presentation of Fragility of Erythrocytes to Hypotonic Saline, with Preliminary Remarks on the Function of Reticulocytes ........ J. H. Bolton 172
The Laboratory Diagnosis of Sickle Cell Anemia with Special Reference to the Diagnostic Parameter ............................ Herbert M. Per 179
Concomitant Infectious Mononucleosis and Hemolytic Icterus
David H. Appleman and Maurice M. Morrison 186
Infectious Lymphadenosis (Mononucleosis) and Hemolytic Anemia in a Negro; Recovery Following Splenectomy Sloan J. Wilson, Charles E. Ward and Luther W. Gray 189
Abstracts .................................................................................. 193
Book Reviews ............................................................................ 199

No. 3
Urethane (Ethyl Carbamate) Therapy in Multiple Myeloma
J. Philip Loge and R. Wayne Rundles 201
The Response of Eosinophils in the Guinea Pig to Sensitization, Anaphylaxis and Various Drugs .................... Max Samter 217
A Factor in Serum Which Accelerates the Conversion of Prothrombin. I. Its Determination and Some Physiologic and Biochemical Properties
A. de Vries, B. Alexander and R. Goldstein 247
"Refined" Liver Extract in Tropical Macrocytic Anemia
J. C. Patel and Y. M. Bhende 259
A Case of Cyclical Agranulocytosis with Marked Improvement Following Splenectomy .......................... H. W. Fullerton and H. L. D. Duguid 269
Chronic Neutropenia: Favorable Response Following Splenectomy
Harry A. Weiss and William T. Collins 278
Leukemoid Reaction Due to Mixed Malaria Infection. Report of a Case
James A. Riley and George M. Robins 283
Abstracts .................................................................................. 288

No. 4
Experimental Production of Nutritional Macrocytic Anemia in Swine
G. E. Cartwright, Betty Tatting, Helen Ashenbrucker and M. M. Winterbo 301
The Use of Replacement Transfusion in Diseases other than Hemolytic Disease of the Newborn ...................... M. Bessis 324
Preparation of Stabilized Solutions of Hemoglobin
Robert B. Pennell and William Elliott Smith 380
The Effect of Cobalt on the Oxygen Capacity and the Methemoglobin Content of the Blood ....................... Mary C. Bucciero and James M. Orten 395
# CONTENTS

Editorial: Trace Metals in Blood with Particular Reference to Zinc and Carbonic Anhydrase .......................... Bert L. Vallee and Mark D. Altschule 398
News and Views .................................................................................................................. 402

No. 5

(This number of the Journal was published as a Special Issue: "Blood Cells and Their Reactions.")

Preface: Blood Cells and Their Reactions ............. William Dameshek 403
The Chemistry and Functioning of the Mammalian Erythrocyte .... S. Granick 404
Blood Carbonic Anhydrase Activity in Anemia, with a Note on Polycythemia Vera .......................................................... H. D. Lewis and M. D. Altschule 442
The Zinc Content of Whole Blood, Plasma, Leukocytes and Erythrocytes in the Anemias ................... Bert L. Vallee and John G. Gibson, II 455
The Relationship between Carbonic Anhydrase Activity and Zinc Content of Erythrocytes in Normal, in Anemic and other Pathologic Conditions Bert L. Vallee, Herbert D. Lewis, Mark D. Altschule and John G. Gibson, II 467
Heinz Body Phenomenon in Erythrocytes. A Review ........... Stewart H. Webster 479
Ovalocytosis Associated with the Sickle Cell Trait ........ Robert S. Fadem 505
The Blood and Bone Marrow in Patients with Cirrhosis of the Liver Lawrence Berman, Arnold R. Axelrod, Thomas N. Horan, Samuel D. Jacobson, Elwood A. Sharp and Elmore C. VonderHeide 511
An Evaluation of Sternal Aspiration as an Aid in Diagnosis of the Malignant Lymphomata .................... Talbert Cooper and Charles H. Watkins 534
Bone Marrow Regeneration in Experimental Benzene Intoxication Bernard Steinberg 550
Aspiration of Bone Marrow in Laboratory Animals R. Dorothy Sundberg and Ruth E. Hodgson 557
The Occurrence of the Periodic Acid-Schiff Reaction in Various Normal Cells of Blood and Connective Tissue George B. Wislocki, Jack J. Rheingold and Edward W. Dempsey 562
Glycogen in Human Blood Cells ....... Robert P. Gibb and Robert E. Stowell 569
A Histochemical Study of "Acid" and "Alkaline" Phosphatase Distribution in Normal Bone Marrow Smears ........ M. Rabinovitch and D. Andreucci 580
Production of Charcot-Leyden Crystals from Eosinophils with Aerosol MA W. W. Ayres 595
Megakaryocytes in Normal and in Thrombocytopenic Individuals; With Introduction of a New System of Differential Count for Megakaryocytes Victorino de la Fuente 614
Platelet Thrombosis in Human Hemostasis. A Histologic Study of Skin Wounds in Normal and Purpuric Individuals ...... Howard D. Zucker 361
CONTENTS

The Effect of the Parenteral Injection of Epinephrin on Leukocyte Counts in Normal Subjects and in Patients with Addison's Disease
Jacques L. Gabri/ove, Mario Volterra, Mildred D. Jacobs and Louis J. Soffer 646

Studies of Blood Passed through an Artificial Kidney
Nannie K. M. deLeeuw and A. Blaustein 653

A Method for Isolating Living Polymorphonuclear Leukocytes from Peripheral Blood
Allen H. Minor and Lee Burnett 667

A Method for the Rapid Separation of Leukocytes and Nucleated Erythrocytes from Blood or Marrow with a Phytohemagglutinin from Red Beans (Phaseolus Vulgaris)
Jonah G. Li and Edwin E. Osgood 670

Abstracts 676

News and Views 689

Book Reviews 691

Index* 693

No. 6

Chronic Congenital Aregenerative Anemia (Pure Red-Cell Anemia) Associated with Iso-Immunization by the Blood Group Factor 'A'
Carl H. Smith 697

Mediterranean Anemia in the Negro. A Report of Four Cases and their Families
Steven O. Schwartz and Jack Mason 706

A Rapid Slide Test for Heterophile Antibody in Infectious Mononucleosis
William C. Moloney and Lucy Malzone 712

The Parallel Effects of Magnesium on the Complementary and Coagulative Activities of Blood Serum
Frank Maltaner and José O. de Almeida 728

The Absence of the Heterophile Reaction in the Spinal Fluid in Infectious Mononucleosis
Harold A. Lyons and Grant Harrison 734

A Factor in Serum which Accelerates the Conversion of Prothrombin to Thrombin: II. Its Evolution with Special Reference to the Influence of Conditions which Affect Blood Coagulation
Benjamin Alexander, Andre de Vries and Robert Goldstein 739

III. Its Relationship to the Coagulation Defect of Thrombocytopenic Blood
Benjamin Alexander and Andre de Vries 747

Studies on Hemophilia. V. The Coagulation Defect in Hemophilia with Particular Reference to the Conversion of Prothrombin to Thrombin and the Evolution of the Prothrombin Conversion Accelerator
Benjamin Alexander and Andre de Vries 752

Lymphatic Leukemia and Lymphatic Leukemoid States in Cancer of the Stomach
Jörgen Bichel 759

Lymphocytic Leukemoid Reaction of the Blood Associated with Miliary Tuberculosis
Frank H. Gardner and Stacy R. Mettier 767

Revised Nomenclature: Pro and Con
Editorial: What's in a Name
M. M. Wintrobe 776

Correspondence and Comment 777

* This issue carries its own index and is also included in the annual volume index.
### CONTENTS

Abstracts ........................................................................................................ 783
Book Review ..................................................................................................... 792

No. 7

The Clinical Association of Macrocytic Anemia with Intestinal Stricture and Anastomosis ....... D. G. Cameron, G. M. Watson and L. J. Witts 793
The Experimental Production of Macrocytic Anemia by Operations on the Intestinal Tract .... D. G. Cameron, G. M. Watson and L. J. Witts 803
The Blood Counts of the Adult Albino Rat ...................................................... D. G. Cameron and G. M. Watson 816
Observations on the Effect of an Animal Protein Factor Concentrate on Persons with the Macrocytic Anemia of Pernicious Anemia, of Nutritional Macrocytic Anemia and of Sprue, and on Persons with Nutritional Glossitis ................................................................. Tom D. Spies, Guillermo Garcia Lopez, Fernando Milanés, Robert E. Stone, Ruben Lopez Toca, Tomas Aramburu and Sam Kartus 819
Pernicious Anemia and Related Anemias Treated with Vitamin B12 Edgar Jones, William J. Darby and John R. Trotter 827
Comparison of Vitamin B12 from Liver and from Streptomyces Griseus in the Treatment of Pernicious Anemia ............................................................... Lowell A. Erf and Bruce Wimer 845
The Effect of Various Anticoagulants on the Specific Gravity of Blood and of Plasma, and on the Hematocrit .......................................................... Paul L. McLain and C. H. William Ruhe 863
The Kell-Cellano (K-k) Genetic System of Human Blood Factors
Philip Levine, Milton Wigod, Abby M. Backer and Ruth Ponder 867
Editorial: Autoimmunization ........................................................................ William Dameshek 873
Abstracts .......................................................................................................... 875
Book Reviews ................................................................................................... 889

No. 8

Familial Hypochromic Anemia Associated with Postsplenectomy Erythrocyte Inclusion Bodies .......... Harold Mills and S. P. Lucia 891
Hemolysins in Acquired Hemolytic Anemia. Effect of pH on the Activity in Vitro of a Serum Hemolysin ................................................................. J. V. Dacie 928
Observations on the Influence of the Hypophysis and the Adrenal Cortex on Blood Platelet Levels ........................................................... Elijah Adams 936
The Effect of Quantitative and Qualitative Protein Deficiency on Blood Regeneration. I. White Blood Cells .................................................................. K. Guggenheim and Edith Buechler 958
II. Hemoglobin ................................................................................................. Edith Buechler and K. Guggenheim 964
Hypoplastic Anemia due to Atabrine Alfred P. Fishman and J. Murray Kinsman 970
Influence of Fibrinogen Concentration upon Plasma Prothrombin Time Murray Weiner and Shepard Shapiro 977
Abstracts .......................................................................................................... 982
## CONTENTS

### No. 9

- Mediterranean Hemopathic Syndromes. *V. Chini and C. Malaguzzi Valeri* 989
- The Effect of Stasis of Blood in Varicose Veins on Erythrocyte Fragility, with Accompanying Studies Comparing Red Cells and Other Blood Elements with Cubital Vein Blood. *Stacy R. Mettler, John C. Weaver and Alice F. McBride* 1033

### No. 10

- Periodic (Cyclic) Neutropenia, an Entity. A Collection of Sixteen Cases. *Hobart A. Reimann and C. Thomas deBerardinis* 1109

### No. 11

- Diagnosis and Mechanism of Hemolysis in Chronic Hemolytic Anemia with Nocturnal Hemoglobinuria. *J. V. Dacie* 1183
CONTENTS

Serologic Method of Purifying Blood Group A Substance
   William C. Boyd and Rose M. Reguera 1214

Hemolytic Reactions Produced in Dogs by Transfusion of Incompatible
Dog Blood and Plasma. I. Serologic and Hematologic Aspects
   Lawrence E. Young, Donald M. Ervin and Charles L. Yuile 1218

II. Renal Aspects Following Whole Blood Transfusions
   Charles L. Yuile, Theodore F. Van Zandt, Donald M. Ervin
   and Lawrence E. Young 1232

Effects of the Intramuscular Administration of BAL (2,3-Dimercaptopro-
panol) in a Subject with the Sickle Cell Trait: Case Report
   William J. Kubns 1240

Rh Isoosensitization in the American Negro
   Milton S. Sacks, Joseph A. Guilbeau, Jr., George T. Bradford and Elsa F. Jahn 1245

The Pathogenesis of Erythroblastosis Fetalis ................. B. S. Kline 1249

Correlation between the Mean Corpuscular Volume and Reticulocytosis in
Phenylhydrazine Anemia in Swine
   F. Douglas Lawrason, D. C. Eltzholz, C. R. Sipe and P. K. Schork 1256

Fetal and Adult Hemoglobins in the Blood of Infants Affected with Hemo-
lytic Disease of the Newborn.............. Eric Ponder and Philip Levine 1264

The Coincidence of Mediterranean Anemia and Pernicious Anemia in a
Young Sicilian ....................... William H. Crosby and Harry J. Sacks 1267

Editorial: Inheritance Patterns in Mediterranean Anemia and Sickle Cell
Anemia.............................................. William Dameshek 1271

Abstracts................................................. 1273

Book Review............................................. 1280

No. 12

The Prothrombin Consumption Test: Its Clinical and Theoretic Implications
   Armand J. Quick and Jean E. Favre-Gilly 1281

The Chain Reaction of the Blood Clotting Mechanism in Relation to the
Theory of Hemostasis and Thrombosis ............... J. H. Milstone 1290

Hypoprophosphinemia: Studies of a Case of the Idiopathic Type and the
Effect of Serum Administration. . Charles L. Crockett, Jr., Donald Shotton,
   Charles G. Craddock, Jr., and Byrd S. Leavell 1298

The Effect of Artificial Surfaces on Blood Coagulability, with Special Refer-
ence to Polyethylene... Thomas J. Donovan and Bernard Zimmermann 1310

The Role of Staphylocoagulase in Blood Coagulation. II. Coagulation in the
Absence of Calcium and in the Presence of Fluorides, Heparin, and
Azo Dyes................................................. John B. Miale 1317

The Determination of the Level of Leukocytes in the Blood Stream with
Inflammation. A Thermostable Component Concerned in the Mechanism
of Leukocytosis................................. Valy Menkin 1323

Experimental Thoracic Duct Fistula: Observations on Lymphocyte Output
   William W. L. Glenn, Francis X. Bauer and Samuel L. Cresson 1338
The Effects of Roentgen Rays on the Inflammatory Cells of the Mouse and Rabbit

William A. Townsend and Berry Campbell 1346

A Preliminary Study of the Relationship Between Lactobacillus Lactis Dorner Response and Clinical Anti-Pernicious Anemia Activity of Liver Extracts

Wilfrid F. White, John R. Mote and Edwin E. Hays 1357


R. Wendell Davis, Richard M. Christian, Donald M. Ervin and Laurence E. Yeung 1361

Tuberculous Splenomegaly with the Hypersplenism Syndrome. A Case Report

H. C. Meredith, Jr., J. Q. Early and Walter Becker 1367

Abstracts 1374