an important advance in the treatment of a neoplastic disease

‘ALKERAN’

MELPHALAN

for the treatment of

MULTIPLE MYELOMA

‘Alkeran’ brand Melphalan is the L-phenylalanine derivative of nitrogen mustard, also known as Compound CB 3025 and L-Sarcolysin, is useful in the treatment of multiple myeloma by oral route. Although there is no cure for multiple myeloma, ‘Alkeran’ brand Melphalan is considered by leading authorities to be a real advance which provides substantial benefit to one-third to one-half of the patients treated.

Warning: As with other nitrogen mustard drugs, excessive dosage will produce marked bone marrow depression. Frequent blood counts are essential to determine optimal dosage and to avoid toxicity. The drug should be discontinued or the dosage reduced upon evidence of abnormal depression of the bone marrow.

Contraindications: ‘Alkeran’ brand Melphalan should not be given if other similar chemotherapeutic agents or radiation has been administered in the recent past, or if the neutrophil and/or platelet counts are depressed. The drug should not be administered concurrently with radiation.

Precautions: If the leukocyte count falls below 3,000 cells/cu. mm., or the platelet count below 100,000/cu. mm., the drug should be discontinued until the blood picture has had a chance to recover. Whenever possible, use of the drug should be avoided during the first trimester of pregnancy.

Adverse reactions: Nausea and vomiting have followed the use of high doses of ‘Alkeran’ brand Melphalan.

Preparation: 2 mg., Scored Tablets, Bottles of 50.

Complete information available from your ‘B.W. & Co.’ Representative or from Professional Services Dept. PML.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.
in prothrombin time testing

Because it's the safety zone for the patient on oral anticoagulants. To prevent the formation of another thrombus, anticoagulants slow the enzyme reactions of coagulation, by depressing the activity of certain clotting factors. As enzyme activity is reduced, the patient's plasma becomes far more sensitive to minor defects in the test system. Such defects (e.g., smudged glassware or a few degrees difference in temperature) are more apt to cause longer times than shorter ones. (An erroneously long time reported to the clinician may result in the patient's dosage being reduced to a dangerously low level.)

To reveal defects, the control plasma must react with the same sensitivity as the anticoagulated patient's plasma. If it does not, it will not detect a falsely prolonged prothrombin time.

because, in 1+4 dilution, Diagnostic Plasma Warner-Chilcott reacts with the same sensitivity as the anticoagulated patient's plasma. (Not all control plasmas do. To enhance stability, excess clotting factors are added to some. Even when diluted 1+4 they still have sufficient activity to cause prothrombin times to fall near normal.) Diagnostic Plasma Warner-Chilcott should be run routinely in the normal range (undiluted) and in the therapeutic range (in 1+4 dilution). As a normal control it reveals defects in the test system that could affect normal plasma. As a therapeutic control (because in dilution its enzyme activity is comparable to that of the anticoagulated patient) it reveals defects in the test system that could otherwise falsely prolong the prothrombin time of the patient on therapy.
NOTE TO CONTRIBUTORS

Papers are accepted for publication on condition that they are contributed solely to this Journal. Manuscripts must be typewritten, in good English, double or triple spaced, on good quality bond paper with at least one-inch margins, the original and one duplicate submitted (figures and tables should also be submitted in duplicate). Brief Reports of not more than 4-5 double spaced, typewritten pages, and especially of new or preliminary work, Letters to the Editor, Hypotheses and Brief Reviews may be submitted for prompt publication, subject to editorial review.

References to literature, both text and bibliography, should conform with this Journal's usage. Contributors are advised to examine issues of the Journal so that their manuscripts will conform to the Journal's style as to table and figure references, citations of the literature in the text, preferred spellings, abbreviations, and so forth.

Tables will be furnished without charge to the limit of one and one-half printed pages total, charts and illustrations in black and white to the limit of four. Excessive tables are charged for at approximately $20.00 per page, depending upon the type of material, and excessive illustrations are charged for at $10.00 each. The cost of colored illustrations in both articles and reprints must be borne by the contributors, and an estimate of such cost will be provided upon submission of the material.

Academic and/or hospital affiliations of each author, and an address for mailing proofs should be submitted with the article.

Reprints of articles will be furnished to contributors when ordered in advance. An order form, showing cost of reprints, is sent with proofs. BLOOD—The Journal of Hematology is published 12 times a year in two volumes.

Correspondence concerning business matters should be addressed to Grune & Stratton, Inc., Medical Publishers, 2130 South 17th St., Sheboygan, Wis., or 381 Park Avenue South, New York 16, N. Y. All communications concerning editorial matters should be addressed to Dr. William Dameshek, Harrison Ave. and Bennet St., Boston 11, Mass.

Subscription rates, $19.00 per year within the United States; foreign, $20.00 per year. Students, Fellows, Interns and Residents may receive a reduced subscription of $12.50 per year (a letter giving qualifying data must accompany such orders). Single copies $3.00, foreign $3.50. Supplementary issues sold at special prices obtainable on request. Subscriptions are accepted on a calendar year basis.

Changes of address notices, including both the subscriber's old and new address, should be sent at least one month in advance to the Publishers, Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y.


Published monthly at 2130 South 17th St., Sheboygan, Wis. Second class postage paid at Sheboygan, Wisconsin.
When the need for iron is acute...

inject

Astrafer® (Astra) (dextriferron)

intravenously

Side Effects: In exceptionally sensitive patients, flushing of the face, followed by a sensation of warmth throughout the body may be seen. Such reactions are proportional to the speed of injection and disappear momentarily.

Precautions: Inject slowly, not more than 5 cc. in 2 minutes. Patient should be made to rest 15 to 30 minutes after each injection. If expected results are not obtained after administration of the calculated amount, a complicating illness should be suspected and therapy discontinued. A second course is not indicated in the absence of proved, massive, intercurrent hemorrhage.

Contraindications: Pernicious anemia, hemolytic anemia, chronic leukemia, bone marrow depression and liver damage.

Consult manufacturer's literature before using.

Write for literature and professional sample.

ASTRA Pharmaceutical Products, Inc.
Worcester 6, Massachusetts
One donor twin was PLASMAPHERESESED...

with a new Fenwal* single phlebotomy PLASMAPHEREISIS BLOOD-PACK* unit. His annual plasma yield—more than six times the average—was comfortably and safely obtained. This exclusive Fenwal PLASMAPHEREISIS system is a practical and simple procedure for both blood banks and donors...permits collection of whole blood, separation of plasma and return of the red cells to the donor with only one phlebotomy.

In addition, the Fenwal PLASMAPHEREISIS system is further safeguarded by the exclusive matching-numbers method for positive red cell identification with the donor.

Write for additional detailed information.

*Laboratories, Morton Grove, Illinois
With S/P disposables, your washing, cleaning, sterilizing
problems go up in smoke

Use them once, then incinerate. No more scraping. Or washing. Air drying, Re-assembling. Sterilization. Or cooling. All of these steps toward re-use "go up in smoke" when you use S/P disposables in your laboratory. They're convenient, time-saving and economical. They reach you chemically clean, eliminating the possibility of contamination. S/P has a wide variety of time-saving disposables. Petri dishes, beakers, pipettes, funnels, liquid samplers, test tubes, syringes, storage bags for solids and liquids, needles and . . . well, quite a few more. Too many to list here. But we have listed our extensive line of disposables in a special illustrated brochure. Just write to our Evanston office for your copy of this comprehensive catalog. Or ask your S/P Representative to see his samples.

**Scientific Products**

Division of American Hospital Supply Corporation

General Offices: 1210 Leon Place, Evanston, Illinois

Regional Stocking Locations: Atlanta • Boston • Charlotte • Chicago • Columbus • Dallas • Detroit • Kansas City • Los Angeles • Miami • Minneapolis • New Orleans • New York • San Francisco • Seattle • Washington, D.C.

Warning: This drug is offered for use only in acute life-threatening situations where hemorrhage results from an overactivity of the fibrinolytic system.

AMICAR®
Aminocaproic Acid

An entirely different agent for the control of bleeding by stabilizing blood-clot formation

What it is—and what it is not
AMICAR Aminocaproic Acid is an historic break-through in the control of bleeding because it is the first systemic agent that stabilizes blood-clot formation. It is different in chemical makeup and pharmacologic action from any other drug or entity now available for the control of bleeding. It is unique in its action, and does not produce its effect by mechanisms available up to now to control runaway bleeding. In contrast to other agents, it does not act by promoting intravascular clot formation; does not act by time-consuming strengthening of the capillary walls; does not act by establishing a mechanical block; unlike vitamin K analogues it does not act on the direct formation of fibrin; and it is not a replacement for fibrinogen or any other naturally occurring substance essential to normal blood coagulation.

AMICAR is closely related to lysine, but lacks the a-amino group. It is absorbed rapidly following oral intake; and it is excreted rapidly, most of it unmetabolized, whether administered orally or intravenously.

And highly important—AMICAR is relatively non-toxic. It is rapidly excreted in practically unmetabolized form. It does not appear to interfere with essential metabolic processes.

AMICAR Aminocaproic Acid
inhibits fibrinolysis—controls bleeding

AMICAR controls excessive bleeding by blocking one of the first crucial events in the chain of chemical reactions leading to clotting-failure: it inhibits the activation of plasminogen to prevent the formation of plasmin, and to a lesser extent, inhibits plasmin itself.1 5

Hyperfibrinolysis—a major cause of excessive bleeding

In normal blood-clotting, fibrinogen is converted to fibrin monomers which polymerize to form larger groups; these later undergo gelation to produce the clot. But when the plasminogen-plasmin enzyme system is disturbed, so that there is excessive plasmin, the normal blood-clotting mechanism goes awry. With fibrinogen lysed by plasmin, disorganized and unstable clots are formed that dissolve spontaneously. The result is excessive bleeding. Such hyperfibrinolysis may be associated with various surgical procedures, hematological disorders, neoplastic diseases, hepatic cirrhosis, and abruptio placentae.

References:

*Text of official brochure on third and fourth pages following*
AMICAR®
Aminocaproic Acid

Effectively controlled hyperfibrinolytic bleeding in obstetric conditions

"Hemorrhage currently is the principal cause of maternal mortality," according to Phillips, having displaced infection as the leading cause. And, as pointed out in the literature, it has become increasingly apparent that disorders of blood coagulation are usually present when uterine bleeding is fatal. Probably the most frequent cause of excessive blood loss in pregnancy is premature separation of the placenta. However, only where a hyperfibrinolytic process has been demonstrated in abruptio placentae can AMICAR be expected to control hemorrhage.

Roth administered AMICAR Aminocaproic Acid (5 Gm. intravenously) to 56 patients with excessive bleeding immediately after expulsion of the placenta or in the puerperium. In 44 of these patients (78.6%), who had hemorrhage associated with such conditions as surgical delivery, protracted and difficult second stage, manual separation of the placenta, etc., hemostasis occurred within a few minutes after injection of the agent. In the 12 patients who failed to respond to this treatment, the continued bleeding resulted from vaginal or cervical tears, hyperplastic decidual endometritis, and placental polyp.

Similar findings, but on fewer patients, have been reported by other investigators. Tobin treated with AMICAR two patients from the obstetric service who had marked hypofibrinogenemia. Additional treatment consisted of fibrinogen and whole blood. There was not only a striking rise in fibrinogen levels, but there was also inhibition of fibrinolytic activity.

Tench has reported on the life-saving use of AMICAR in a patient with abruptio placentae. The patient was admitted to the hospital for delivery with moderate vaginal bleeding which later became severe. A laboratory report indicated "no fibrinogen," and the patient later went into severe shock. AMICAR was administered intravenously, followed by fibrinogen, with a repeat dosage of the former agent. The following morning, the fibrinogen level was normal, and recovery was uneventful.

In the case of another patient with abruptio placentae, who had profuse bleeding and a severe fibrinolytic process, Fisher administered AMICAR, with the result that the fibrinolysis was halted. The response to this agent, according to the investigator, was quite impressive.

References:
Official Brochure

**AMICAR Aminocaproic Acid;** 6-Aminocaproic Acid: Intravenous, Syrup, and Tablets.

**Warning**

THIS DRUG IS OFFERED FOR USE ONLY IN ACUTE LIFE-THREATENING SITUATIONS WHERE HEMORRHAGE RESULTS FROM AN OVERACTIVITY OF THE FIBRINOLYTIC SYSTEM.

**AMICAR** Aminocaproic Acid has a very specific action in that it inhibits both plasminogen activator substances and, to a lesser degree, plasmin activity. The drug should NOT be administered without a definite diagnosis, and/or laboratory findings indicative of hyperfibrinolysis (hyperplasminemia).*

Animal experiments indicate particular caution should be taken in administering AMICAR Aminocaproic Acid to patients with cardiac, hepatic or renal diseases.

Demonstrable animal pathology in some cases have shown endocardial hemorrhages and myocardial fat degeneration. The use of this drug should thus be restricted to patients in whom the benefit hoped for would outweigh the hazard.

Rapid intravenous administration of the drug should be avoided since this may induce hypotension, bradycardia and/or arrhythmia.

One case of cardiac and hepatic lesions observed in man has been reported. The patient received 2 grams of aminocaproic acid every 6 hours for a total dose of 26 grams. Death was due to continued cerebral vascular hemorrhage. Necrotic changes in the heart and liver were noted at autopsy.

If it is accepted that fibrinolysis is a normal process, potentially active at all times to ensure the fluidity of blood, then it must also be accepted that inhibition of fibrinolysis by aminocaproic acid may result in clotting or thrombosis. However, there is no definite evidence that administration of aminocaproic acid has been responsible for the few reported cases of intravascular clotting which followed this treatment. Rather, it appears that such intravascular clotting was most likely a result of the fibrinolytic disease being treated.

It has been postulated that extravascular clots formed in vivo with incorporated aminocaproic acid may not undergo spontaneous lysis as do normal clots. However, it is the consensus of experts that the few reported cases of extravascular clotting could have occurred in the absence of aminocaproic acid treatment.

**Description**

**AMICAR** Aminocaproic Acid **Ledele** is a monaminocarboxylic acid which acts as an effective inhibitor of fibrinolysis.

**Site and Mode of Action**

The beneficial fibrinolysis-inhibitory effects of **AMICAR** Aminocaproic Acid appear to be mediated principally via inhibition of plasminogen activator substances and, to a lesser degree, through antiplasmin activity. The drug is absorbed rapidly following oral administration. Whether administered by the oral or intravenous route a major portion of the compound is recovered unmetabolized in the urine. The renal clearance of **AMICAR** Aminocaproic Acid is high (about 75 per cent of the creatinine clearance). Thus the drug is excreted rapidly. After prolonged administration **AMICAR** Aminocaproic Acid distributes throughout both the extracranial and intravascular compartments of the body and readily penetrates human red blood and other tissue cells.

**Indications**

**AMICAR** Aminocaproic Acid has proved useful, in many instances, in the treatment of excess bleeding which results from systemic hyperfibrinolysis and urinary fibrinolysis. In life-threatening situations, fresh whole blood transfusions, fibrinogen infusions, and other emergency measures may be required.

Systemic hyperfibrinolysis, a pathological condition, may frequently be associated with surgical complications following heart surgery (with or without cardiac bypass procedures) and portacaval shunt; hematological disorders such as aplastic anemia; abruptio placenta; hepatic cirrhosis; neoplastic disease such as carcinoma of the prostate, lung, stomach, and cervix.

Urinary fibrinolysis, usually a normal physiological phenomenon, may frequently be associated with life-threatening complications following severe trauma, anoxia, and shock. Symptomatic of such complications is surgical hematuria (following prostatectomy and nephrectomy) or nonsurgical hematuria (accompanying polycystic or neoplastic diseases of the genitourinary system).


The use of **AMICAR** Aminocaproic Acid should be accompanied by tests designed to determine the amount of fibrinolysis present. There are presently available (a) general tests, such as those for the determination of the lysis of a clot of blood or plasma and (b) more specific tests for the study of various phases of fibrinolytic mechanisms. These latter tests include both semi-quantitative and quantitative techniques for the determination of pro-fibrinolysin, fibrinolysin, and anti-fibrinolysin.
INTRODUCING

THE CUTTER Saftiflex®

MODEL 610—Primary unit with one attached empty bag for performing any of 3 post-collection tasks: 1) Split whole blood; 2) separate plasma and red cell mass; 3) separate platelet concentrate and platelet-poor plasma.

MODEL 620—Primary unit with two attached empty bags for performing any two of the 3 post-collection tasks.

MODEL 630—Primary unit with three attached empty bags for performing all three post-collection tasks, or to provide small increments of whole blood for pediatric use.

SERIES

4 new models, each a completely closed system for greater protection of blood and components from outside contamination.
CUTTER’S COMPLETE 
Saftiflex® LINE

with a host of practical features you’ve come to expect from Cutter advanced engineering and development.

Special Administration Safeguards: The uniquely-designed sterile recipient outlet, adaptable to all standard administration sets without spurring during insertion. A heavy, molded plastic spike protector surrounds the outlet area inside the bag to guard against spike puncture. The recipient outlet is covered by an easily removable, tamper-proof sterility protector.

New Saftiflex for Plasmapheresis: Permits simple, efficient and reliable blood removal and allows donor to remain on the table while separation is made and during return of his own red blood cells.

New Saftiflex Heparin Bag: Developed especially for drawing blood for use in priming heart-lung machines and artificial kidneys.

New Twin Coil Heat Exchange Unit: Guards against the danger of cardiac arrest during the rapid, massive infusion of refrigerated blood. This double coil, high volume capacity unit when immersed in a warm water bath, quickly provides a maximum amount of blood at controlled temperature.

Ask your Cutter representative to demonstrate the unique new features in the CUTTER Saftiflex® Line
A new and practical guide to

BLOOD COAGULATION, HEMORRHAGE and THROMBOSIS

Methods of Study

Second Edition, Revised and Enlarged (1964)

Edited by Leandro M. Tocantins, M.D. and Louis A. Kazal, Ph.D.

Thomas Drake Cardeza Professor of Clinical Medicine and Hematology, Department of Medicine; and Director, Charlotte Drake Cardeza Foundation, Jefferson Medical College, Philadelphia, Pa.

Associate Director, Cardeza Foundation; Associate Professor of Medicine (Research Hematology) and Associate Professor of Physiology, Jefferson Medical College, Philadelphia, Pa.

This practical new book now puts the technical details of a large battery of tests at the fingertips of the laboratory worker and investigator. Whether he is a seasoned practitioner or a beginner in the field, the worker in these phases of today's hematology will find much of value here for his specialty.

The book describes 91 methods that measure the activity of the platelets, or blood clotting factors and inhibitors, 11 methods that demonstrate physiologic or hemostatic properties and 20 methods for the preparation of blood clotting factors or activities.

The methods are presented in much greater detail than is usually found in the literature. For each, the authors describe the objective and principle; list the reagents and apparatus required; detail the steps in the performance of the test; and, finally, review the manner of expressing results and of making calculations, the normal range of values found, the precautions to be taken, the sources of error, and the pertinent references.

Almost 100 authors, foremost authorities in the field, have collaborated in the compilation of these techniques.

560 Pages • 50 illus. • $17.50
...introduce quantitation

with unique decantation principle that “puts a number” on end result. Traditional laborious hemagglutination-hemolytic techniques are so subjective that results may vary considerably from lab to lab. At best, answers are merely qualitative.

The AutoAnalyzer method not only standardizes and automates the procedure (in itself a considerable achievement), but it “puts a number” on the end result: expresses answers directly in % agglutination or % hemolysis.

The whole procedure is a simple, straightforward chemical method under precise control every step of the way...cell/anti-serum volume, reagent proportioning, mixing, time/temperature, etc. Equipment is rugged and simple, even down to the readout, which is colorimetric rather than cumbersome complicated electronic counting devices.

Beyond its use for routine blood typing and assay, the new method promises to open broad avenues of investigation in all fields where antigen-antibody reactions are measured by hemagglutination or hemolytic reactions.
NEW FOR YOUR BLOOD BANK

[Image of a medical dropper with the text 'HYLAND']
CONTROL KIT
Group A; Test Cells; Group A2 Test Cells; Group B Test Cells; Group O, Rh Positive Test Cells; Group O, Rh Negative Test Cells; Group O, D^+ Positive Test Cells; Coombs Control Cells; Self-Check Unit (unknown cells and unknown serum)

SELF-CHECK UNIT
Unknown cells and serum to be tested by your laboratory and reported on special reply card. A summary of results of other participating laboratories will be returned to you.

HYLAND REFERENCE MANUAL OF IMMUNOHEMATOLOGY
NEW, SECOND EDITION including chapters on Blood Bank Control Procedures and Crossmatching for the Emergency Transfusion.

Get your complimentary copy of the Manual and details of the program from your Hyland Representative soon. Clip and mail this coupon today.

Hyland Laboratories
4501 Colorado Blvd., Los Angeles, California 90039

Gentlemen:
Please ask my Hyland representative to:
☐ see me on his next routine call.
☐ call me for an appointment. (Phone ______ Ext.____)

Name ______________________ Title ______________________

Blood Bank or Hospital ______________________

Street ______________________

City ______________________ State ______________________ Zip Code _________
New... for your Blood Bank – A COMPREHENSIVE

WORK SHEETS –
plus a consultation service on special problems related to blood typing and isosensitization

A PART OF THE HYLAND BLOOD BANK CONTROL PROGRAM

CELL PANEL
for atypical antibody identification

COOMBS CONTROL CELLS
for verifying negative Coombs tests

SCREENING CELLS
for atypical antibody detection

A PART OF THE HYLAND BLOOD BANK CONTROL PROGRAM
SPECIFY HYLAND FOR ALL BLOOD BANK REAGENTS
Here's why B-D Vacutainer Specimen Tubes make blood collection easier...simpler

Specially designed B-D Sterile Disposable VACUTAINER Needles attach quickly and easily...have Microlance points for greatest sharpness ever.

Color-coded stopper is designed for easy cleaning...simple removal. Unique construction prevents vacuum loss.

Reusable plastic holder does not require sterilization after use...assembled unit handles like an aspirating syringe.

VACUTAINER Specimen Tube produces consistent blood specimen volume...permits centrifuging without transfer to another tube. Available with a wide range of additives.

B-D Vacutainer Blood Collecting System functions as an aspirating syringe...speeds work...cuts cost

BECTON, DICKINSON AND COMPANY, Rutherford, New Jersey
In Canada: Becton, Dickinson & Co., Canada, Ltd., Toronto 10, Ontario

B-D, DISCARD, MICROLANCE, AND VACUTAINER ARE TRADEMARKS.
NOW AVAILABLE

PROGRESS IN HEMATOLOGY

Volume IV (1964)

Edited by CARL V. MOORE, M.D. and ELMER BROWN, M.D.

The rapid advances continually being made in hematology make a volume such as PROGRESS IN HEMATOLOGY must reading for the physician who wants to stay abreast of the field. For the Editors of this up-to-date volume have chosen a group of papers that review some of the most important of the newer concepts of the science.

Each paper is the work of outstanding authorities. A glance at the table of contents and list of contributors at right will show the range and value of this excellent volume.

Drs. Moore and Brown are continuing the work so ably started by the late Leandro M. Tocantins, M.D., who edited the first three volumes of this series. Those volumes were widely acclaimed by professional journals. Here is a sampling of the reviews:

Vol. III—"A publication that should find a grateful audience ranging from the especially curious medical student to the front-line investigator"—ARCHIVES OF PATHOLOGY. "Another successful attempt to survey some recent developments in hematology, particularly in the laboratory and investigative fields . . ." —CALIFORNIA MEDICINE.

Vol. II—"Clear, complete and objective presentations of difficult subjects . . . will no doubt prove useful to general practitioners and specialists interested in disorders of the blood."—AMERICAN JOURNAL OF CLINICAL PATHOLOGY.

Volume IV—320 pp., 83 illus., $13.75
Volume III—394 pp., $16.50
Volume II—296 pp., 47 illus., $10.25
Volume I—Out of print

GRUNE & STRATTON, INC. 381 Park Avenue South New York, N. Y. 10016
CORONARY HEART DISEASE and SERUM LIPID LEVELS

Many authorities believe that elevated blood lipid levels are related to atherosclerotic heart disease. Now, a simple test makes possible the use of total serum lipid studies in every clinical laboratory.

Here is an interesting new tool for the study of atherosclerotic heart disease, diabetes mellitus, hypothyroidism, and other conditions associated with elevated blood lipid levels. This method for determining total serum lipids with LIPITEST® Reagent is extraordinarily simple. It may be performed in any clinical laboratory with less time, less technical skill and less equipment than are required for a blood glucose test.

The test employs detergents in the form of a single reagent (LIPITEST Reagent) to release the lipids from serum, and the use of a special bottle in which the test is performed and lipid materials are measured. Duplicate samples may be obtained in a total of 30 minutes, only 3 minutes of which is actual working time. Results are reproducible, reliable, and have an accuracy of ±50 mg. %). Extensive experience indicates that recovery with this method achieves more accurate results than are obtained with the two older methods for total serum lipid determination.

LIPITEST Reagent and the simple apparatus necessary for performing the test are available from all Distributors of Merck Laboratory Chemicals.


Reprints available on request.
Contents — Vol. 17 No. 4

Estimation of Ferrioxamine and Desferrioxamine in Urine, by J. Fielding and Gillian M. Brumstrøm.
Chemical Tests for Phaeochromocytoma, by J. Kelleher, G. Walters, B. Robinson and P. Smith.
The Effect of Lead on the Fragility of the Red Cell Incubated in Vitro, by H. A. Waldron.

PATHOLOGY OF TUMOURS IN CHILDREN
The Pattern of Neoplasia in Children, by J. K. Steward.
Ewing's Tumours and Neuroblastomas, by H. B. Marsden and J. K. Steward.
Tumours of the Central Nervous System in Children, by Peter O. Yates.
The Role of Radiotherapy in the Treatment of Tumours in Children, by Dorothy Pearson.
Carcinoma of the Thyroid in Myxoedema, by G. Solare and A. Nichol.
A Retrowertional Tumour of the Chemodectoma Type, by J. N. Harcourt-Webster.
Carcinomatosus Metastasis to the Vertebral Bodies, by R. A. B. Drury, P. H. Palmer and Wilma J. Highman.
Preparation of Complement-Fixing Antigens for Routine Use in Diagnosis of Eaton Pneumonia, by Ell I. Jansson.
Activity of Ampicillin in Vitro Compared with Other Antibiotics, by R. Sutherland and G. N. Rolinson.

Technical Methods:
Quantitative Estimation of Formiminoglutamic Acid in Urine, by J. Kohn.
A New System for Rapid Haemoglobin Estimations and Leucocyte Counts, by R. E. Davis and D. J. Nicol.
A Simple Apparatus for Thin-Layer Chromatography, by M. P. Walsh.
A Polystyrene Mouse Cage, by A. Jones.
Association of Clinical Pathologists: 72nd General Meeting.
a major advance in cell counting and analyzing introducing the new MODEL F Coulter Counter®

Now, even easier, faster for the most reliable and accurate counts

Featuring
New
Continuous
Twin Monitor®

1. Oscilloscope display for complete system check-out.
2. Orifice image display for optical aperture check-out.

*Patent applied for.

the second generation . . .

MODEL F COULTER COUNTER

a direct development from the world-famous Model A Coulter Counter

Patented throughout the world.

Write or phone today for complete information or a demonstration in your own laboratory.

COULTER ELECTRONICS, INC.

© 590 West 20th Street, Hialeah, Florida Phone: 305-887-8131
One Gift Works Many Wonders

GIVE THE UNITED WAY

Photo contributed by Daniel J. Ransohoff
Accuracy measured in millionths of an inch!

You can depend on the accuracy of your AO Spencer Bright-Line Hemacytometer. It's one of the most precisely manufactured instruments in your lab. Engineering specifications are extremely rigid. Production tolerances are almost sub-microscopic...critical dimensions are held to maximum permissible deviation measured to millionths of an inch! Each dimension specified...depth and flatness of chamber, spacing between rulings, uniformity of line width, thickness of the metallic coating...must be met on every one of the tens of thousands of AO Spencer Bright-Lines made and sold each year. Skilled AO craftsmen employing unique, time-proved equipment make each chamber exactly to specifications. Every chamber is then tested for accuracy by exacting scientific methods. There's no room for error! For years AO Spencer Bright-Lines, taken from stock at random, have met Bureau of Standards certification for accuracy without a single rejection.

This precise construction plus the superior visibility offered by the Bright-Line rulings assure greater accuracy in every count you do. Today, more than ever, the world-famous Bright-Line trademark continues to be your absolute assurance of superior quality and performance in counting chambers. You can continue to use them with confidence.
A comprehensive study of

MULTIPLE MYELOMA

PETER MIESCHER, M.D., Editor

Four aspects of this disease, which has been getting increasing attention from hematologists and internists in recent years, are detailed in this timely volume:


2. Multiple Myeloma, by I. Snapper and Alvin I. Kahn

3. Protein Abnormalities Associated with Proliferative Disorders of Plasma Cells and Lymphocytes, by Edward C. Franklin and Jerome Lowenstein

4. Structural Features of Cells Associated with the Paraproteinemias, by Dorothea Zucker-Franklin

180 Pages • Illustrated • $5.00

(Note: The articles in this special edition were originally published 1964 in Seminars in Hematology.)
atypical antibodies?

DETECT WITH
SELECTOGEN®

then

IDENTIFY WITH
IDENTIGEN®

and...
for your added convenience...

You are provided with:

**ANTIGRAM** slide rule and report blank...a quick, easy slide rule device for determining and reporting results of antibody testing

**ANTIGRAM** file folder...a handy loose-leaf binder for quick reference to completed **ANTIGRAM** reports

"**Negative**" labels...pressure-sensitive labels for units of blood screened with **SELECTOGEN**

*Trademark

**DIAGNOSTIC DIVISION**

**ORTHO PHARMACEUTICAL CORPORATION**

**RARITAN, NEW JERSEY**

---

**Ortho**
BELIEVABILITY . . .

is our biggest problem

Until you see for yourself what an IL Model 143 Flame Photometer really can do this might sound like just another wild claim, but it is true . . . the IL Model 143 does take all the confusion and fuss out of Flame Photometry . . . brings a brand new concept of computer automation and reliability to an otherwise unwieldy process plagued with chances for unnecessary errors.

The new IL Flame Photometer uses only one dilution (200:1) to give direct digital readout throughout the entire range of concentration seen in biological samples (0-290 mEq/l Na+, 0-290 mEq/l K+). It is that simple. Just turn it on. Calibrate in seconds with one standard solution. Your first reading will be correct and you can prove it again and again (standard coefficient of variation ±0.3%). There is no time wasted either with many reiterative steps, serial dilutions or annoying computations.

Get the latest facts on how fast, reliable and accurate Flame Photometry has become. Contact your nearest IL Field Representative for a demonstration without obligation or write for your free copy of the IL user list plus instrument data No. 143.
EFFECTIVE IN DETECTING ANTIBODIES ALREADY KNOWN
EFFECTIVE IN DETECTING NEW ANTIBODIES

CONTROLLED SENSITIVITY is the key feature behind KNICKERBOCKER COOMBS SERUM

REVIEW THE RECORD OF OUTSTANDING EFFECTIVENESS!

<table>
<thead>
<tr>
<th>Year</th>
<th>Antibody</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1954</td>
<td>anti-V</td>
<td>detecting the first anti-V.</td>
</tr>
<tr>
<td>1955</td>
<td>Fy(a-b)</td>
<td>establishing first phenotype</td>
</tr>
<tr>
<td>1956</td>
<td>anti-Penicillin antibody</td>
<td>discovering anti-penicillin antibody.</td>
</tr>
<tr>
<td>1957</td>
<td>Jka(b)</td>
<td>confirming first phenotype</td>
</tr>
<tr>
<td>1959</td>
<td>anti-Ge</td>
<td>identifying the second example</td>
</tr>
<tr>
<td>1960</td>
<td>anti-Di*</td>
<td>detecting the fourth example</td>
</tr>
<tr>
<td>1961</td>
<td>Xg*</td>
<td>establishing the first sex-linked blood group system (Xgs).</td>
</tr>
<tr>
<td>1962</td>
<td>anti-Jk*</td>
<td>describing the second example</td>
</tr>
</tbody>
</table>

REFERENCES:
7. Data on file with Knickerbocker Biologics, New York, N.Y.
8. Data on file with Knickerbocker Biologics, New York, N.Y.

KNICKERBOCKER COOMBS SERUM for more complete antibody coverage available in 5 ml. & 10 ml. sizes

To order or have your Pfizer representative call, write:

**KNICKERBOCKER BIOLOGICS**
Pfizer Laboratories Division/Chas. Pfizer & Co., Inc.
300 West 43rd Street, New York, N.Y. 10036