

# Contents

|  |  |    |
|--|--|----|
| CHAPTER 1  | Review of Acid-Base Balance of the Body. . . . .                                       | 49 |
| METABOLISM   | Regulation of Acid-Base Balance. . . . .   | 49 |
| Review of Carbohydrate Metabolism . . . . .                      | Acidosis . . . . .   | 54 |
| General Considerations . . . . .                                 | Alkalosis . . . . .  | 56 |
| Carbohydrates in the Body . . . . .                              | Blood for Acid-Base Studies . . . . .  | 56 |
| Sources of Glucose . . . . .                                     | Acid-Base Composition of Blood Plasma . . . . .  | 57 |
| Processes Involved in the Disposal<br>of Carbohydrates . . . . . | Review of Water and Electrolyte<br>Metabolism . . . . .                                | 59 |
| Glucosuria . . . . .   | Dehydration and Fluid and Electrolyte<br>Replacement . . . . .                         | 61 |
| Variations in Glucose Content of the<br>Blood . . . . .          | Laboratory Tests for Dehydration and<br>Electrolyte Loss . . . . .                     | 62 |
| Disorders Involving Carbohydrate<br>Metabolism . . . . .         | Laboratory Procedures in the Maintenance<br>of Fluid and Electrolyte Balance . . . . . | 64 |
| Diabetes Mellitus . . . . .                                      | Hormones . . . . .   | 64 |
| Stages of Diabetes Mellitus . . . . .                            | Insulin . . . . .  | 65 |
| Juvenile Diabetes . . . . .                                      | Hormones of the Adenohypophysis . . . . .  | 66 |
| Benign Glucosurias . . . . .                                     | Hormones of the Neurohypophysis . . . . .  | 67 |
| Hyperinsulinism and Hypoglucemia . . . . .                       | Hormones of the Adrenal Cortex . . . . .   | 67 |
| Inborn Errors of Carbohydrate<br>Metabolism . . . . .            | Hormones of the Adrenal Medulla . . . . .  | 71 |
| Review of Nitrogen Metabolism . . . . .                          | Gonadotropic Hormones . . . . .  | 72 |
| General Considerations . . . . .                                 | Progesterone . . . . .   | 73 |
| Non-protein Nitrogen . . . . .                                   | Estrogenic Hormones . . . . .  | 74 |
| Urea and Ammonia . . . . .                                       | Testosterone . . . . .   | 74 |
| Uric Acid . . . . .  | Thyroxin . . . . .   | 74 |
| Creatine and Creatinine . . . . .                                | Parathormone . . . . .   | 75 |
| Excretion of Nitrogenous Waste Products                          | Tests Relating to the Study of Hormones . . . . .                                      | 76 |
| Amino Acids . . . . .  | Insulin Regulation . . . . .   | 76 |
| Plasma Proteins . . . . .  | Indications for a Glucose Tolerance<br>Test. . . . .                                   | 76 |
| Inborn Errors of Amino Acid Metabolism                           | Standard Oral Glucose Tolerance Test . . . . .   | 76 |
| Review of Fat Metabolism . . . . .                               | One-hour, Two-dose Glucose Tolerance<br>Test. . . . .                                  | 79 |
| General Considerations . . . . .                                 | Intravenous Glucose Tolerance Test . . . . .   | 81 |
| Plasma Lipoids in Disease . . . . .                              | Postprandial Blood Glucose Concen-<br>tration . . . . .                                | 81 |
| Inborn Errors of Fat Metabolism . . . . .                        | Glucose Loading Procedure . . . . .  | 82 |
| Review of Organic Acid Metabolism . . . . .                      | Glucose-Cortisone Tolerance Test . . . . .   | 82 |
| Review of Mineral Metabolism . . . . .                           | Test for Hyperinsulinism . . . . .   | 83 |
| Sodium . . . . .   | Hypophysis (Pituitary)—Adrenal<br>Regulation . . . . .                                 | 84 |
| Potassium . . . . .  | Aldosterone in Urine . . . . .   | 84 |
| Chlorides . . . . .  | Corticosteroids in Urine . . . . .   | 84 |
| Calcium . . . . .  | 17-Ketosteroids in Urine . . . . .   | 84 |
| Phosphorus . . . . .   | Vanilmandelic Acid in Urine . . . . .  | 84 |
| Magnesium . . . . .  | Subcutaneous Epinephrine Test . . . . .  | 84 |
| Iron . . . . .   | Four-Hour ACTH Test . . . . .  | 84 |
| Copper . . . . .   | “Water Test” for Adrenal Cortical<br>Insufficiency . . . . .                           | 85 |
| Iodine . . . . .   | Sodium Deprivation Test . . . . .  | 86 |
| Cobalt . . . . .   |  |    |
| Manganese . . . . .  |  |    |
| Molybdenum . . . . .   |  |    |
| Miscellaneous . . . . .  |  |    |



Pathologic Conditions of the Mouth . . . 140  
 Oral Lesions. . . . . 140  
 Ptyalism . . . . . 142  
 Xerostomia . . . . . 142  
 Stomatitis . . . . . 142  
 Vincent's Angina . . . . . 143  
 Herpetic Stomatitis . . . . . 143  
 Oral Erythema Multiforme . . . . . 143  
 Thrush . . . . . 144  
 Pyorrhea Alveolaris or Periodontoclasia . . . . . 144  
 Leukoplakia . . . . . 145  
 Lichen Planus . . . . . 145  
 Miscellaneous Conditions . . . . . 145

CHAPTER 4

THE STOMACH AND GASTRIC CONTENTS

Physiology of the Stomach . . . . . 147  
 Stomach Contents . . . . . 151  
 Examination of Stomach Contents . . . . . 153  
 Gastric Acidity: pH Methods versus  
 Indicator and Titration Methods . . . . . 155  
 Various Test Procedures . . . . . 156  
 Ewald Test . . . . . 157  
 Histamine Test . . . . . 157  
 Alcohol Test . . . . . 158  
 Insulin Test for Vagal Continuity . . . . . 158  
 Ion-Exchange Method Without  
 Intubation (Diagnex Blue Test) . . . . . 158  
 Normal and Pathologic Findings in  
 Stomach Contents . . . . . 159  
 Acidity Findings . . . . . 167  
 Acidity Curves After an Ewald Test . . . . . 167  
 Acidity After Other Tests . . . . . 168  
 Additional Examinations of the Stomach . . . . . 170  
 Motor Power and Emptying-time . . . . . 170  
 Size and Position . . . . . 171  
 Gastroscopic Examination . . . . . 171  
 Exfoliative Cytology of the Stomach . . . . . 172  
 Chemical Methods . . . . . 173  
 Qualitative Analysis . . . . . 173  
 Quantitative Analysis . . . . . 176  
 Gastric Diseases . . . . . 182  
 Peptic Ulcer. . . . . 183  
 Carcinoma of the Stomach . . . . . 184  
 Acute Gastritis . . . . . 185  
 Chronic Gastritis . . . . . 185  
 Achylia Gastrica . . . . . 186  
 Gastric Neurosis . . . . . 186  
 Gastrointestinal Syndrome Complexes . . . . . 186  
 Hypersecretion and Hyperchlorhydria . . . . . 188  
 Atony of the Stomach . . . . . 188  
 Acute Dilatation of the Stomach . . . . . 189  
 Chronic Dilatation of the Stomach . . . . . 189  
 Acute Gastrointestinal Hemorrhage . . . . . 189

CHAPTER 5

THE PANCREAS, LIVER AND RELATED ORGANS

Duodenal Contents . . . . . 191  
 Duodenal Fluid . . . . . 191  
 Pancreatic Juice . . . . . 191  
 Bile . . . . . 191  
 Collection of Duodenal Contents and  
 Bile . . . . . 192  
 Contraindications for the Collection of  
 Duodenal Contents . . . . . 193  
 Normal and Pathologic Findings of  
 Duodenal Contents . . . . . 193  
 Chemical Methods for the Examination of  
 Duodenal Contents . . . . . 195  
 The Pancreas . . . . . 199  
 Functions of the Pancreas. . . . . 199  
 Pancreatic Function Tests . . . . . 199  
 Examinations Associated with Digestive  
 Disturbances . . . . . 200  
 Enzyme Studies . . . . . 200  
 Metabolic Tests . . . . . 201  
 Tests Commonly Performed in  
 Pancreatic Studies . . . . . 202  
 The Xylose Tolerance Test. . . . . 202  
 Electrolytes in Sweat . . . . . 203  
 Iontophoresis of Sweat . . . . . 205  
 Conductivity Measurements of  
 Electrolytes in Sweat . . . . . 206  
 Diseases of the Pancreas . . . . . 206  
 Acute Pancreatitis . . . . . 206  
 Chronic Pancreatitis . . . . . 208  
 Carcinoma in the Pancreas . . . . . 208  
 Cysts of the Pancreas . . . . . 209  
 Acute Hemorrhagic Pancreatic Necrosis . . . . . 209  
 Diabetes Mellitus . . . . . 210  
 Hyperinsulinism . . . . . 210  
 Fibrocystic Disease of the Pancreas . . . . . 210  
 Malabsorption Syndrome . . . . . 211  
 Calculi of the Pancreas . . . . . 213  
 The Liver . . . . . 213  
 General Considerations . . . . . 213  
 Bilirubin and Bile . . . . . 214  
 Functions of the Liver . . . . . 216  
 Liver Function Tests . . . . . 217  
 Findings of Liver Function Tests . . . . . 217  
 Bilirubin in Serum and Urine . . . . . 217  
 Urobilinogen in Urine and Feces . . . . . 219  
 Cephalin—Cholesterol Flocculation . . . . . 219  
 Thymol Turbidity . . . . . 220  
 Other Turbidity and Flocculation  
 Tests . . . . . 220  
 Transaminases . . . . . 220  
 Bromsulfalein Excretion . . . . . 220  
 Alkaline Phosphatase . . . . . 221  
 Serum Proteins . . . . . 221  
 Cholesterol and Cholesterol Esters . . . . . 222



Instrumentation (*Continued*)  
 Photometry (*Continued*)  
   Nephelometry . . . . . 306  
   Fluorometry . . . . . 306  
   Flame Photometry . . . . . 306  
   Atomic Absorption Spectrometry . . . . . 307  
   X-ray Spectrometry . . . . . 307  
 Titrations . . . . . 308  
 Electrophoresis . . . . . 308  
   Immuno-electrophoresis . . . . . 309  
 Chromatography . . . . . 310  
 Spectroscopy . . . . . 311  
 pH Meters . . . . . 311  
 Blood Gas Analyzers . . . . . 312  
 Osmometers . . . . . 312  
 Conductivity Meters . . . . . 312  
 Analytical Balances . . . . . 312  
 Automatic Analyzers . . . . . 312  
 Blood Cell Counters . . . . . 313  
 Miscellaneous Instruments . . . . . 314  
 Diagnostic Kits . . . . . 314  
 Millipore Filters . . . . . 314  
 Radioactive Instrumentation . . . . . 314  
 Medical and Surgical Instrumentation . . . . . 314  
 Calibration of Micropipets . . . . . 315

CHAPTER 9

DIAGNOSTIC PROCEDURES USING RADIOISOTOPES

Introduction . . . . . 317  
 Clinically Important Radioisotopic Agents . . . . . 317  
 Thyroid Function Studies . . . . . 318  
   The 24-Hour Uptake . . . . . 318  
   Thyroid Scanning . . . . . 321  
   Auxiliary Technics . . . . . 322  
     The T-3 Suppression Test . . . . . 322  
     The TSH Stimulation Test . . . . . 322  
   Resin "T-3" Procedures . . . . . 322  
   Comparison of Methods . . . . . 324  
   Non-isotopic Methods . . . . . 324  
 Pancreatic Function Studies . . . . . 325  
 Schilling Test for Pernicious Anemia . . . . . 326  
 Determination of Blood and Erythrocyte  
   Volumes . . . . . 328  
   Blood Volume Using Human IHSA <sup>131</sup>I . . . . . 328  
   Erythrocyte Volume Using <sup>51</sup>Cr . . . . . 331  
 Dynamic Studies . . . . . 331  
   Kidney Function . . . . . 331  
   Liver Function . . . . . 332  
   Cardiac Output . . . . . 332  
 Isotopic Organ Scanning . . . . . 333  
   The <sup>131</sup>I Thyroid Scan . . . . . 333  
   Renal Photo Scan . . . . . 334  
   The Brain Scan . . . . . 335  
   The Lung Scan . . . . . 336  
   The Liver Scan . . . . . 336  
   Scanning of Bone Lesions . . . . . 337

The Placentogram . . . . . 339  
 Basic Terms Used in Nuclear Medicine . . . . . 339

CHAPTER 10

CHEMICAL ANALYSIS OF THE BLOOD

List of Procedures . . . . . 342  
 General Considerations . . . . . 344  
   Containers for Blood Specimens . . . . . 345  
   Anticoagulants and Preservatives . . . . . 346  
   Collection of Blood . . . . . 347  
   Separation of Plasma or Serum . . . . . 348  
   Collecting Blood for Ultramicro Technics . . . . . 348  
     Hematocrit Reading . . . . . 349  
   Collection of Blood for Acid-Base Studies . . . . . 350  
   Possible Causes of Hemolysis . . . . . 351  
   The Effect of Eating Breakfast . . . . . 351  
   Apparatus Required for Blood Chemical  
   Analysis . . . . . 351  
   Quality Control in Clinical Chemistry . . . . . 353  
   Common Sources of Error in Clinical  
   Chemical Determinations . . . . . 353  
   Reference Standards for Blood Chemistry . . . . . 354  
   The Function of Controls and Standards . . . . . 354  
   "Normal" Findings . . . . . 355  
   The Interpretation of Blood Chemistry  
   Reports . . . . . 355  
   The Significance of Numerical Reports . . . . . 356  
 Ultramicro Analytical Methods . . . . . 357  
   Ultramicro Blood Chemistry Procedures  
   in Pediatrics . . . . . 358  
 Analysis of Blood . . . . . 358  
   Protein-Free Filtrates . . . . . 358  
   Methods Arranged Alphabetically . . . . . 360  
 Normal Findings and Abnormal Changes . . . . . 352  
 Summary of Blood Chemical Analyses . . . . . 534

CHAPTER 11

THE KIDNEYS

General Considerations . . . . . 541  
 The Urine . . . . . 541  
   Average Normal Constituents . . . . . 541  
   Pathologic Constituents . . . . . 542  
   Indications for a Urine Examination . . . . . 542  
   Collection of Sample . . . . . 542  
   Mid-Stream Samples . . . . . 543  
     Quantitative Urine Culture (Colony  
     Count) . . . . . 543  
   Routine Examination of Urine . . . . . 543  
   Normal and Pathologic Findings of Urine . . . . . 544  
   Kidney Function Tests . . . . . 558  
     General Considerations . . . . . 558  
     Value of the Various Kidney Function  
     Tests . . . . . 560



CHAPTER 15

HEMATOLOGY

A Review of Normal Hematohistology . . . . . 752  
 The Origin of the Blood Cells . . . . . 752  
 Recommended Nomenclature in  
   Hematology . . . . . 752  
 Formed Elements of the Blood . . . . . 759  
 The Blood Monocytes . . . . . 762  
 Granulocytic Series . . . . . 762  
 Lymphocytic Series . . . . . 763  
 Erythrocytic Series . . . . . 763  
 Thrombocytic Series . . . . . 763  
 Site of Hematopoiesis . . . . . 765  
 Fate of the Blood Cells . . . . . 765  
 Methods for Obtaining Blood Samples . . . . . 765  
 Examination of the Blood . . . . . 767  
   Choice of Procedures . . . . . 767  
   Interpretation of Blood Counts . . . . . 768  
   Quality Control in Hematology . . . . . 770  
   Hemoglobin . . . . . 772  
   Erythrocyte Count . . . . . 773  
   Sedimentation-rate . . . . . 778  
   Hematocrit . . . . . 780  
   Mean Corpuscular Volume . . . . . 780  
   Mean Corpuscular Hemoglobin  
     Concentration . . . . . 781  
   Mean Corpuscular Hemoglobin . . . . . 781  
   Mean Corpuscular Diameter . . . . . 782  
   Mean Corpuscular Average Thickness . . . . . 782  
   Leukocyte Count . . . . . 783  
   Antibodies . . . . . 784  
 The Stained Blood Film . . . . . 784  
   Wright's Method . . . . . 784  
   Special Staining Methods . . . . . 790  
 Examination of the Blood Cells . . . . . 792  
   Anomalies of the Erythrocytes . . . . . 792  
   Differential Count . . . . . 794  
   Anomalies of the Leukocytes . . . . . 795  
 Bone Marrow . . . . . 797  
   Indications for Bone Marrow  
     Examination . . . . . 797  
     Procedure for Bone Marrow Puncture . . . . . 799  
     Preparation of Bone Marrow Films . . . . . 799  
     Staining of Bone Marrow Preparations . . . . . 802  
     Interpretation . . . . . 802  
   Diseases of Erythroipoiesis . . . . . 804  
     (Refer to detailed outline beginning on  
       page 804)  
   Hypersplenism . . . . . 862  
   Diseases of Leukopoiesis . . . . . 865  
     (Refer to detailed outline on page 865)  
   Disorders of Hemostasis . . . . . 897  
     (Refer to detailed outline beginning on  
       page 897)  
   Parasites of the Blood . . . . . 929

CHAPTER 16

CEREBROSPINAL FLUID

Physiology of the Cerebrospinal Fluid . . . . . 931  
 Composition of the Cerebrospinal Fluid . . . . . 931  
 Indications and Contraindications for Col-  
   lection of Cerebrospinal Fluid . . . . . 932  
 Routine Examination of Cerebrospinal Fluid . . . . . 933  
 Normal and Pathologic Findings of Cere-  
   brospinal Fluid . . . . . 934  
 The Cerebrospinal Fluid Findings in  
   Disease . . . . . 945

CHAPTER 17

MICROBIOLOGY

Collection of Specimens . . . . . 949  
 Bacteriologic Methods . . . . . 951  
 Bacteriologic Culture of Material from  
   Patients . . . . . 958  
 Bacteriologic Diagnosis (Index of  
   Organisms to be Detailed) . . . . . 962  
 The More Common Bacteria as Classified  
   by Bergey . . . . . 991  
 Sensitivity Tests for the Antibiotics . . . . . 991  
 Testing the Efficiency of Hospital  
   Sterilization . . . . . 996

CHAPTER 18

VIRAL AND RICKETTSIAL DISEASES

Introduction . . . . . 997  
 Nature of Viruses . . . . . 999  
 Mode of Infection . . . . . 1000  
 Specific Prevention . . . . . 1000  
   Passive Immunization . . . . . 1000  
   Vaccines . . . . . 1001  
 Classification of Viruses . . . . . 1001  
   Adenoviruses . . . . . 1001  
   Arboviruses . . . . . 1002  
   Picornoviruses of Human Origin . . . . . 1002  
   Polioviruses . . . . . 1002  
   Coxsackie Viruses . . . . . 1002  
   ECHO Viruses . . . . . 1003  
   Rhinoviruses . . . . . 1003  
   Herpesviruses . . . . . 1003  
   Herpes simplex . . . . . 1004  
   Varicella Herpes-Zoster . . . . . 1004  
   Cytomegalovirus . . . . . 1004  
   B Virus . . . . . 1004  
   Myxoviruses . . . . . 1004  
   Mumps . . . . . 1005  
   Measles . . . . . 1005  
   Rubella . . . . . 1005





|  |      |  |  |
|--|------|--|--|
| Fluid and Electrolyte Disturbances . . . . .                                   | 1141 |  |  |
| Ultramicro Blood Chemistry Technics . . . . .                                  | 1141 |  |  |
| Dehydration . . . . .  | 1142 |  |  |
| The Endocrine System . . . . .   | 1144 |  |  |
| Hypothyroidism . . . . .   | 1144 |  |  |
| Hyperthyroidism or Thyrotoxicosis . . . . .                                    | 1145 |  |  |
| Hypoparathyroidism and Hyperparathyroidism . . . . .                           | 1145 |  |  |
| Disorders of the Adrenal Glands . . . . .                                      | 1146 |  |  |
| Genital Dysfunction . . . . .  | 1146 |  |  |
| Pituitary Disorders . . . . .  | 1147 |  |  |
| The Blood . . . . .  | 1147 |  |  |
| Normal Values . . . . .  | 1147 |  |  |
| Anemia in the Newborn Period . . . . .   | 1147 |  |  |
| Auto-immune Hemolytic Anemias . . . . .  | 1150 |  |  |
| Iron Deficiency Anemias . . . . .  | 1151 |  |  |
| Hematologic Findings in Infectious Disease . . . . .                           | 1151 |  |  |
| Cerebrospinal Fluid . . . . .  | 1151 |  |  |
| Normal Values . . . . .  | 1152 |  |  |
| Spinal Fluid Findings in Disease . . . . .                                     | 1152 |  |  |
| Accidental Poisoning in Children . . . . .                                     | 1153 |  |  |
| Lead Poisoning . . . . .   | 1153 |  |  |
| Salicylate Poisoning . . . . .   | 1154 |  |  |
| Petroleum Product Poisoning . . . . .  | 1154 |  |  |
| Acute Mercury Poisoning . . . . .  | 1155 |  |  |
| Barbiturate Poisoning . . . . .  | 1155 |  |  |
| Naphthalene Poisoning . . . . .  | 1155 |  |  |
| <b>CHAPTER 25</b>  |      |  |  |
| MILK AND WATER ANALYSIS  |      |  |  |
| Milk Analysis . . . . .  | 1156 |  |  |
| Collection of Sample . . . . .   | 1156 |  |  |
| Chemical Analysis . . . . .  | 1157 |  |  |
| Bacteriologic Analysis . . . . .   | 1160 |  |  |
| Bacteria Count . . . . .   | 1160 |  |  |
| Coliform Count . . . . .   | 1162 |  |  |
| Hemolytic Streptococci . . . . .   | 1163 |  |  |
| Tubercle Bacilli . . . . .   | 1163 |  |  |
| Staphylococci . . . . .  | 1164 |  |  |
| Brucella . . . . .   | 1164 |  |  |
| Bacteriologic Testing of Infant Formula . . . . .                              | 1164 |  |  |
| Rinse Test on Assembled Nipples . . . . .                                      | 1165 |  |  |
| Water Analysis . . . . .   | 1166 |  |  |
| General Considerations . . . . .   | 1166 |  |  |
| Collection of Sample . . . . .   | 1167 |  |  |
| Bacteriologic Analysis . . . . .   | 1168 |  |  |
| Membrane Filter Technic . . . . .  | 1169 |  |  |
| <b>CHAPTER 26</b>  |      |  |  |
| HISTOLOGIC TECHNIC AND CYTOLOGY  |      |  |  |
| Introduction . . . . .   | 1170 |  |  |
| Fixation and Sectioning Technics . . . . .                                     | 1170 |  |  |
| Staining Technics . . . . .  | 1177 |  |  |
| Technics of Cytotechnology . . . . .   | 1194 |  |  |
| Solutions and Stains . . . . .   | 1203 |  |  |
| Bibliography . . . . .   | 1210 |  |  |
| <b>CHAPTER 27</b>  |      |  |  |
| LEGAL MEDICINE AND TOXICOLOGY  |      |  |  |
| General Considerations . . . . .   | 1212 |  |  |
| Products Most Frequently Named in Ingestion Accidents . . . . .                | 1213 |  |  |
| Essential Factors in the Diagnosis of Poisoning by Clinical Findings . . . . . | 1214 |  |  |
| Diseases Simulating Poisoning . . . . .  | 1214 |  |  |
| Clinical Symptoms Associated With Poisoning and Various Diseases . . . . .     | 1214 |  |  |
| Collection of Specimens . . . . .  | 1215 |  |  |
| Classical Mistakes in Forensic Pathology . . . . .                             | 1216 |  |  |
| Blood Stains . . . . .   | 1217 |  |  |
| The General Search for Poisons . . . . .                                       | 1218 |  |  |
| Preparation of Specimens for Analysis . . . . .                                | 1218 |  |  |
| Poisons Volatile with Steam . . . . .  | 1219 |  |  |
| Metallic Poisons . . . . .   | 1224 |  |  |
| Alkaloids and Other Organic Poisons . . . . .                                  | 1226 |  |  |
| General Tests . . . . .  | 1227 |  |  |
| Strychnine . . . . .   | 1228 |  |  |
| Atropine . . . . .   | 1228 |  |  |
| Cocaine . . . . .  | 1228 |  |  |
| Opium Alkaloids . . . . .  | 1228 |  |  |
| Nicotine . . . . .   | 1229 |  |  |
| Barbiturate Soporifics and Analgesic Drugs . . . . .                           | 1229 |  |  |
| Barbiturate Drugs . . . . .  | 1231 |  |  |
| Other Neutral or Acidic Organic Poisons . . . . .                              | 1231 |  |  |
| Salicylates . . . . .  | 1231 |  |  |
| Aniline Derivatives . . . . .  | 1232 |  |  |
| Caffeine . . . . .   | 1232 |  |  |
| A Brief Review of the Most Important Poisons . . . . .                         | 1232 |  |  |
| Alcohol, Ethyl . . . . .   | 1232 |  |  |
| Isopropyl Alcohol . . . . .  | 1236 |  |  |
| Carbon Tetrachloride . . . . .   | 1237 |  |  |
| Carbon Monoxide . . . . .  | 1237 |  |  |
| Arsenic . . . . .  | 1240 |  |  |
| Mercury . . . . .  | 1244 |  |  |
| Lead . . . . .   | 1245 |  |  |
| Thallium . . . . .   | 1249 |  |  |
| Barbiturate Drugs . . . . .  | 1250 |  |  |
| Salicylic Acid and Derivatives . . . . .                                       | 1251 |  |  |
| Fluorides . . . . .  | 1252 |  |  |
| Phosphorus . . . . .   | 1253 |  |  |
| Marihuana (Cannabis Sativa) . . . . .  | 1254 |  |  |
| Determination of Silica in the Lung . . . . .                                  | 1255 |  |  |
| Antidotes . . . . .  | 1256 |  |  |
| Identification of Seminal Stains . . . . .                                     | 1257 |  |  |
| <b>APPENDIX</b>  |      |  |  |
| Normal Solutions . . . . .   | 1260 |  |  |
| Normal Weights of Viscera . . . . .  | 1261 |  |  |
| Conversion Factors . . . . .   | 1262 |  |  |
| Table of Atomic Weights . . . . .  | 1264 |  |  |
| <b>INDEX</b>   |      |  |  |
| Index . . . . .  | 1265 |  |  |