

- Abetalipoproteinemia, 24
 Acanthocytes (spur cells), 21, 24, 33, 125, 185
 Acanthocytosis,
 Acquired, 24, 122
 Hereditary, 24, 122
 Acquired stomatocytosis, 122-123
 Acute leukemias, 20, 64, 146-152, 153-157
 Acute lymphoid leukemias
 FAB- Subtypes (L1, L2, and L3), 150-151
 Immunophenotypic Subtypes, 156
 B-ALL (Precursor B, Pre-B, and mature-B), 150-151
 T-ALL (early, intermediate, and late stage), 151
 Acute myelofibrosis
 Acute myeloid leukemias
 Basophilic leukemia, 149, 155
 Eosinophilic leukemia, 150, 155
 Erythroleukemia (M6), 149, 154
 Megakaryoblastic (M7), 149, 154
 Minimally differentiated (M0), 146, 153
 Monoblastic (M5a), 148, 153
 Monocytic (M5b), 148, 154
 Myelomonocytic (M4), 148, 153
 Promyelocytic (M3), 147, 153
 with maturation (M2), 147, 153, 155
 without maturation (M1), 147, 153
 Acute panmyelosis with myelofibrosis, 150
 Adenocarcinoma, 9
 Agglutination of red cells, 27, 33, 123, 126, 130, 188
 Agranulation. *See* Hypogranulation, and specific cell types
 AIDS, 21, 46, 132, 133-134, 137, 142
 AL amyloidosis, 179
 Alder-Reilly anomaly, 143, 144
 Amyloidosis, 97, 179
Anaplasma. *See* *Ehrlichia*
 Anemia
 Aplastic, 20-21, 118, 131, 137-138
 Aregenerative, 118, 165-166
 Associated with acute blood loss, 20
 Associated with bone marrow failure, 118
 Associated with endocrine disorders, 125
 Associated with infection, 123
 Associated with lead poisoning, 115, 116
 Associated with liver disease, 124-125
 Associated with pregnancy, 125
 Associated with renal disease, 125
 Associated with severe burns, 131
 Congenital dyserythropoietic, 28, 40-41, 118
 Diamond-Blackfan, 118
 Fanconi, 118-119, 138
 Hemolytic, 95
 Hereditary Heinz body hemolytic, 26, 28
 Hypoplastic, 20
 Immune hemolytic, 21, 28, 123, 129-130
 Iron deficiency, 112, 116, 124
 Lymphoblastic, 74
 Lymphocytic, 73
 Macrocytic, 132, 168
 Megaloblastic, 28, 38, 45-47, 64, 68, 100, 132
 Microangiopathic, hemolytic, 25
 Microcytic, 112-115, 168
 Monoblastic, 84
 Monocytic, 84
 Myeloid, 46, 50, 100
 Myelomonocytic, 84
 Myelophthistic, 20, 37, 118-119, 131
 Nonmegaloblastic, 132
 Normochromic, 137, 177
 Normocytic, 106, 131, 137, 161
 of chronic disease, 21, 112, 116
 of renal disease, 26
 Pernicious, 26
 Sickle cell, 126
 Sideroblastic, 38, 40, 114-115
 Spur cell, 24
 Anisocytosis, 22, 31, 115, 116-117, 125, 126-131, 134, 162
 Aplasia, 20-21, 118, 120
 Aplastic anemia, 20-21, 118, 131, 137-138
 Apoptotic bodies, 6, 8, 18, 132, 134
 Artifacts, 3-9, 3-19
 Artifactual changes in
 Platelets, 4, 12, 15, 18
 Red cells, 4, 10-11, 14-15, 19
 White cells, 4-5, 12-14, 18
 Atypical chronic myeloid leukemia (aCML), 168
 Auer rods, 8, 18, 50, 63, 146, 153, 165-166
 Autoimmune hemolytic anemia, 123
Babesia, 105, 111
 Bacilli, 106
 Bacteria, 10, 108, 111
 Bands, 12, 17, 47, 54, 197
 Basophilic, 47, 68
 Dysplastic, 47, 55
 Eosinophilic, 47, 65-66
 in adults, 54
 in newborns, 54
 Macrocytic, 133
 Neutrophilic, 47
 Barr body, 45, 51
 Bartonella, 108, 111
 Basket cells, 5
 Basopenia, 137
 Basophils, 67
 Immature, 67, 68-69
 in adults, 68
 in newborns, 68
 Mature, 67, 68-69
 Basophilia, 67, 136, 140
 Basophilic megaloblast, 39, 42
 Basophilic normoblast, 36-37, 42
 Basophilic stippling, 28, 34, 41, 115, 126, 130, 169, 187
 Bassen Kornzweig syndrome, 24
 BCR/ABL fusion gene, 167
 Behcet disease, 96
 Bernard-Soulier syndrome, 94, 181-182
 Bite cells, 28, 33. *See also* Schistocytes
 Blasts, generally, 6, 17, 50, 60-62, 153-154, 156, 201, 203
 Basophilic, 68
 Dysplastic, 63
 Leukemic, 63
 Blast crisis in chronic myeloid leukemia, 74, 158-159

Index

- Blister cells, 25, 32, 130, 190
Blister-like cells, 25, 32, 126, 190
Blood smear examination, 1-2
Burr cells. See Echinocytes
Cabot ring, 28, 34
Candida, 107
Chediak-Higashi syndrome, 143, 145
Chloroma. See Myeloid sarcoma
Chronic idiopathic myelofibrosis (CIMF), 160, 163
Chronic leukemias, 47
 eosinophilic (CEL), 161
 granulocytic (CGL), 47, 158, 162
 lymphocytic (CLL), 5, 12, 25, 170-171
 in prolymphocytic transformation
 (CLL/PL), 171, 174
 myeloid (CML), 140, 158, 167
 myelomonocytic (CMML), 167
 neutrophilic (CNL), 160, 163
Chronic lymphoproliferative disorders, 170-172, 173, 176-179, 180
Chronic myeloproliferative disorders (CMPD), 136, 142, 158-161, 163, 167
Chronic myeloproliferative disorder, unclassifiable, 142, 161, 167-168
Cluster designations
 CD2, 171
 CD4, 171
 CD5, 171, 178-179
 CD7, 171
 CD8, 171
 CD10, 178-179
 CD11, 171
 CD13, 166-167
 CD14, 167
 CD16, 171
 CD19, 171, 177-179
 CD20, 171, 177-179
 CD22, 171
 CD23, 171
 CD33, 166-167
 CD34, 167
 CD56, 171, 177
 CD57, 171
 CD58, 177
 CD64, 167
 CD68, 167
 CD79, 171, 177
 CD103, 171
 CD117, 166
 CD138, 177
Cocci, 106, 110
Codocytes. See Target cells
Cold precipitate. See Cryoproteins
Crenated red cell. See Echinocytes
Crohn disease, 25
Cryoproteinemia, 7
Cryoproteins, 7, 16
Cytoplasmic fragments, 8, 16, 98, 190
Cytoplasmic projections, 5, 17, 176
Damaged white cells, 5
Degenerated white blood cells, 16
Diabetes, 67
Diamond-Blackfan anemia, 118
Di Guglielmo syndrome, 149
Dimorphic red cell population, 22, 31
Disseminated intravascular coagulation (DIC), 27, 131
DMS. See Myelodysplastic syndrome
Döhle bodies, 47, 70, 72, 135, 138, 139, 145, 165, 169
Dutcher bodies, 90, 177
Dysplastic red cell precursors, 41
Eccentricity. See Blister cells
Echinocytes, 24, 32, 125, 185
EDTA artifact, 5-9, 95
Elliptocytes, 32, 121, 125, 128, 188
Endothelial cells, 3, 10
Enzymopathies, 25-26, 118
Eosinopenia, 137
Eosinophils
 Hyposegmented, 66
 Hypersegmented, 66
 Immature, 64, 65-66
 Mature, 64, 65-66
Eosinophilia, 64-66, 136, 140
Epithelial cell, 3, 10
Epstein-Barr virus, 74
Ehrlichia, 106, 110
Erythrocytes, 20-29, 30-35
Erythroblasts. See Pronormoblasts
Erythroleukemia 37-38, 100
Erythrophagocytosis, 8, 17, 62, 130, 198
Essential thrombocythemia (ET), 160, 162
Evans syndrome, 129
Extranodal marginal zone lymphoma, 178
Faggot cells, 147
Fanconi anemia, 118, 181
Fat globules, 4, 11
Fibrin strands, 7, 15, 27
Flame cells, 93, 177, 180
FMC7, 171
Folate deficiency, 2, 94-95, 133, 142
Franklin disease, 178
Fungi, 10, 107, 110
G6PD deficiency, 25-26, 118, 123, 130
Gasser inclusions, 143
Gaucher disease, 172
Granulocytes, immature, 46-50
 Basophilic, 67, 68-69
 Dysplastic, 45-46, 47, 52-53, 55, 57-63
 Eosinophilic, 64, 65-66
 Neutrophilic, 47-50
 Normal, 46-50, 51, 54, 64-65
Granulocytes, mature, 45
 Dysplastic, others, 45-46, 64, 65-66, 67, 69
 Hyposegmented, 46
 Eosinophil, 64, 66
 Neutrophil, 50, 52-53
 Hypersegmented, 45-46
 Basophil, 67, 69
 Eosinophil, 64, 66
 Neutrophil, 50, 52-53
 Normal, 45, 51
 Basophil, 67, 68
 Eosinophil, 64, 65
 Neutrophil, 50, 51
Granulocytic sarcoma, 150
Grape cell (Mott cell), 92
Gray platelet syndrome, 181-182
Hairy cells, 75, 83, 171, 174, 199, 202

Index

- Hairy cell leukemia, 75, 83, 171, 174
Heavy chain disease, 178-179
Heinz bodies, 25-26, 32, 130
HELLP syndrome, 27
Helmet cells. *See* Schistocytes
Hematologic changes associated with infection and/or inflammation, 22
Hemi-ghost cells. *See* Blister cells
Hemoglobin C crystal, 24, 32, 127
Hemoglobin C disease, 21, 120, 127
Hemoglobin C-Harlem, 23
Hemoglobin C-thalassemia, 121, 127
Hemoglobin C trait, 21, 24, 120
Hemoglobin CC disease, 23
Hemoglobin Constant Spring (CS), 114
Hemoglobin delta-beta thalassemia, 117
Hemoglobin DD disease, 118
Hemoglobin E-thalassemia, 21, 23, 117
Hemoglobin E trait, 21, 114
Hemoglobin EE disease, 114
Hemoglobin F-thalassemia, 117, 118
Hemoglobin H disease, 21, 23, 26, 113-114, 117
Hemoglobin H inclusions, 26, 32, 117
Hemoglobin Lepore, 21, 23, 114
Hemoglobin S disease, 23, 120
Hemoglobin SC disease, 23, 114, 118, 120, 127
Hemoglobin SO disease, 23
Hemoglobin SS disease, 23, 118-119
Hemoglobin S-thalassemia, 23, 118, 120
Hemoglobinopathies. *See* specific hemoglobinopathy
 Sickle cell anemia, 119-120, 126
 Sickle cell trait, 119-120
Hemolytic anemias, 95-96
 Immune, 129-130
 Nonimmune, 130-131
Hemolytic disease of the newborn, 129
Hemolytic uremic syndrome, 27
Hereditary acanthocytosis, 121, 128
Hereditary elliptocytosis (ovalocytosis), 121, 128
Hereditary pyropoikilocytosis, 122, 128
Hereditary spherocytosis, 121-122, 128
Hereditary stomatocytosis (hydrocytosis), 121-122, 128
Histoplasma, 106
Howell-Jolly bodies, 26, 28, 34-35, 41, 117, 120, 125, 126, 130-131, 163, 186
Hydrocytes. *See* Stomatocytes
Hypereosinophilic syndrome, 136
Hyperchromia, 20-21, 169
Hyperlipidemia, 5
Hyperthyroidism, 21
Hypobetalipoproteinemia, 24
Hypochromia, 30, 116-117
Hypogranulation, 6
Hypopituitarism, 21
Hypoplastic anemia. *See* Anemia of bone marrow
Hypothyroidism, 21
Idiopathic amyloidosis, 179
Immune hemolytic anemias, 129-130
Immunochemical staining of blasts, generally, 156-157
Immunoglobulins, 7
Infection-associated hematologic changes, 22, 45, 47, 64, 74, 90, 94, 136-138, 139-140
Infection-associated hemolytic anemia, 94-95, 130, 137
Infectious agents seen in blood, 22, 104-109, 110-111
Inflammation-associated hematologic changes, 22, 45, 47, 74, 90, 94, 136, 138, 139
Intracellular organisms, 90, 106-109
Iron deficiency anemia, 21, 26, 46
Juvenile myelomonocytic leukemia (JMML), 167
Karyorrhexis, 5-6, 13-14, 194
Keratocytes, 27
Klinefelter syndrome, 45
Large granular lymphocytic leukemia, 151
Lead poisoning, 21, 115, 116
Left shift of neutrophils, 135, 139
Leishmania, 107
Leptocytes, 23
Leukemias
 Acute eosinophilic, 48
 Acute lymphoblastic, 136, 145
 Acute lymphoid, 20, 74
 Acute myeloid, 100, 146
 Chronic eosinophilic (CEL), 161
 Chronic granulocytic (CGL), 162
 Chronic lymphoproliferative (CLL), 136, 170-172
 Chronic myeloid (CML), 100, 136
 Chronic myelomonocytic (CMML), 167
 Chronic neutrophilic (CNL), 160, 163
 Hairy cell leukemia, 171
 Hypereosinophilic, 48
 Large granular lymphocytic (LGLL), 171
 Plasma cell (PCL), 90-91
 Prolymphocytic (PLL), 171
Leukemoid reaction, 45, 64, 106, 135, 139
Leukocyte anomalies, 135-138 (*see also* Neutrophils)
Leukocytosis, 109, 123, 135-138, 164
Leukoerythroblastosis, 9, 135, 141, 150, 171
Leukopenia, 123, 135-138
Light chain disease, 178-179
Lipemic specimens, 12
Lipid storage disorders. *See* Lysosomal storage disorders
Liver disease, anemia associated with, 46, 132
Loa, 108
Lupus erythematosus (LE), 7, 16, 138
Lymphoblasts, 73, 77
Lymphocytes, 73-75, 200-202
 Abnormal, 18, 75, 82-83, 204
 Atypical (reactive), 74, 201, 203
 Granular, 78, 81, 197
 in adults, 76
 in newborns, 76
 Large, 73, 76, 78, 200-201
 Normal, 73, 76
 Plasmacytoid, 74-75, 79, 204
 Pyknotic, 191
 Reactive (atypical), 74, 80-81
 Small, 76, 78, 200
 Vacuolated, 76-77
Lymphocyte precursors
 Lymphoblast, 74
 Prolymphocyte, 74
Lymphocytopenia, 137
Lymphocytosis, 125, 136, 140, 173
Lymphoma cells. *See* Lymphocytes, abnormal
Lymphomas, 170
Lymphoplasmacytic lymphoma, 178
Lysosomal storage disorders, 172, 174
Macrocytes, 21, 133-134, 169

Index

- Macrocytic anemias, 132, 133
Macroneutrophil, 46
Macronormoblasts, 40, 43
Macropolycyte, 46, 53, 133, 169
Macro-ovalocyte, 22, 30, 38, 169
Malarial parasites, 21, 104-105, 110
Mansonella, 108
March hemoglobinuria, 28, 123
May-Hegglin anomaly, 70, 94, 143
Mediterranean abdominal lymphoma, 178
Megakaryoblasts, 100-101, 163-164
Megakaryocytes, 99-100, 101-103
Megaloblastic anemia, 28, 38, 45-47, 64, 68, 100, 132
Megaloblastoid red cell precursors (macronormoblasts), 40, 43, 165
Megaloblasts
 Basophilic, early and late, 39, 42
 Dysplastic, 44
 Megaloblastic pronormoblast, 38, 42
 Orthochromic, 39, 42
 Polychromatophilic, early and late, 39, 42
 Precursors, 38
Metamyelocytes, 47
 Apoptotic body in, 18
 Basophilic, 49, 58, 68
 Dysplastic, 58, 164
 Eosinophilic, 49, 58, 65
 in adults, 58
 in newborns, 58
 Neutrophilic, 49, 58
Microcytes, 21, 117, 134
Microcytic anemias, 112-115
Microcytosis, 116-117
Microfilaria, 108, 111
Micromegakaryoblasts, 102-103
Micromegakaryocytes, 100, 102-103, 193, 196
Microspherocytes, 23, 32
Mitotic figures, 9
Monoblasts, 84, 153
Monoclonal gammopathy, 90-91, 178
Monocytes, 84-85, 101, 153, 197
 Dysplastic, 88
 Mature, 6, 86-87
 Immature, 6, 89
 Monoblast, 84, 89
 Promonocyte, 84, 89
Monoclonal gammopathy of undetermined significance.
 See Monoclonal gammopathy
Monocytes, 17, 197-199, 204
Monocytopenia, 84, 137
Monocytoma, 150
Monocytosis, 84, 125, 137, 141, 162-164
Mononuclear micromegakaryocyte, 203
Mott cell, 92
Multiple myeloma, 177-178, 180
Mycobacterium, 106
Myeloblast, 18, 50, 62
Myeloblastoma. See Myeloid sarcoma
Myelodysplastic syndromes, 21-22, 38, 40-41, 45-47, 50, 64, 68, 70, 94-95, 100, 132, 141, 142, 155, 164, 165-168, 169
 Myelodysplastic syndrome associated with isolated deletion (MDS-del(5q)), 166-167
 Myelodysplastic syndrome, unclassifiable (MDS-U), 46, 94, 167
Myelocytes, 48-49, 56, 193, 196
 Apoptotic body in, 18
 Basophilic, 48, 56, 68, 195
 Dysplastic, 57
 Eosinophilic, 48, 56, 65-66, 164
 Hypogranular, 57, 163-164, 169, 196
 in newborns, 56
 Neutrophilic, 48, 56, 195-197
Myeloma cells, 7, 91, 93, 180
Myeloid leukemias
 M0, 146, 153
 M1, 147, 153
 M2, 147, 153
 M3, 147, 153
 M4, 148, 153
 M5, 148, 153-154
 M6, 149, 154
 M7, 149, 154
Myeloid sarcoma, 150
Myelophthitic anemia, 20
Myeloproliferative disorders, 8, 20, 24-25, 41, 47, 49-50, 64, 67, 84, 161, 164
Myxedema, 67, 132
Necrobiosis, 6
Neutropenia, 137, 171, 177
Neutrophils, 17, 71
 Bilobed, 18, 51, 144, 192
 Dysplastic, 46, 52
 Hypogranular/agranular, 53, 58, 164, 169, 194
 Hyposegmented, 46, 52-53, 169
 Hypersegmented, 45, 52-53, 133, 142, 144, 163-164, 169
 Immature, 51
 Mature, 51
 Multilobed, 51
 Normal, 45
 Pelger-Huet, 46, 64, 142, 144
 Pseudo Pelger-Huet, 142, 144
 Pyknotic, 191-192
 Unilobed, 144
Neutrophilia, 125, 134, 135, 138, 139
Nieman-Pick disease, 172
Nonhematopoietic malignant cells, 9
Nonimmune hemolytic anemias, 130-131
Normoblasts, 35, 125, 153-154
 Basophilic, early and late, 36-37, 42
 Dysplastic, 44, 163-164
 Orthochromic, 37-38, 42, 44
 Polychromatophilic, early and late, 37, 42
 Pronormoblasts, 42
Normochromia, 20
Normocytes. See Red Cells
Normocytic anemias, 118-125
Nucleated red cells. See Red cell precursors
Organisms, 187
 Babesia, 105, 111
 Bacilli, 106
 Bartonella, 108, 111
 Candida, 107
 Cocci, 106, 110

Index

- Ehrlichia*, 106, 110
Histoplasma, 106
Leishmania, 107
Malarial parasites (*Plasmodium*), 104-105
Toxoplasma, 107
Wuchereria, 109
- Orthochromic megaloblast, 42
Orthochromic normoblast, 39, 42
Ovalocytes. See Elliptocytes
Pancytopenia, 138
Pappenheimer bodies, 29, 35, 114, 116-117, 120, 129
Paroxysmal cold hemoglobinuria, 123
Paroxysmal nocturnal hemoglobinuria, 123
Pelger-Huet anomaly, 46, 64, 142, 144
Perinuclear halo, 36
Phagocytes, 8
Phagocytosis. See Erythrophagocytosis
Plasmablasts, 91, 92, 178, 180
Plasma cells, 90-91, 177-178, 204
 Abnormal (see also Myeloma cells), 91, 180
 Normal, 90, 92
Plasma cell disorders, 90-91, 177-179, 180
Plasma cell leukemia (PCL), 91, 178
Plasma cell myeloma, 177, 179
Plasma cell precursors
 Plasmablast, 91, 92
 Proplasmacyte, 90, 92, 177
Plasma cell tumor, 178
Plasmacytoid lymphocytes, 90
Plasmacytoma, 91, 178
Plasmacytosis, 178-179
Platelet, overlying a red cell, 97
Platelets, 94-96
 Abnormal, other, 94-95, 98
 Giant, 17, 95, 97-98
 Hypogranular/agranular, 11, 95, 98, 190
 Large, 94
 Normal, 94, 97
 Overlying a red cell, 97, 180-187
 Reticulated, 95, 97
Platelet count, 7, 135
Platelet disorders, 7, 9
Platelet precursors, 99-100
 Megakaryoblast, 100
 Megakaryocyte, 100, 101-103
 Abnormal, 99-100
 Denuded, 99, 101
 Normal, 99, 101
 Promegakaryocyte, 101, 103
Platelet satellitosis (rosette), 9, 18
Poikilocytosis, 11, 22, 31, 33, 115, 116-117, 122, 125, 126-131, 134, 162
Polychromasia, 126-131
Polychromatophilic megaloblasts, 39, 42
Polychromatophilic normoblasts, 39, 42
Polychromatophilic red cells (polychromasia), 22
Polycythemia
 Secondary, 159
 Vera (primary), 159, 162
Proerythroblasts. See Pronormoblasts
Porphyrias, 125
Primary amyloidosis, 179
Prolymphocytes, 73, 77, 171, 173, 200
Prolymphocytic leukemia, 73, 171
Prolymphocytic transformation in CLL
Promegakaryocytes, 101
Promegaloblasts, 38-39, 42
Promonocytes, 84
Promyelocytes, 49, 59, 153
 Basophilic, 49, 59, 68
 Dysplastic, 59
 Eosinophilic, 49, 59, 66, 195
 Neutrophilic, 49, 59, 195
 Vacuolated, 59
Pronormoblasts, 36
Proplasmacytes, 90
Pseudo Pelger-Huet cells, 168, 169
Pseudo-spherocytes, 11, 27, 185, 186
Pure red cell aplasia (PRCA), 118
Pyknotic white blood cells
 Eosinophils, 13
 Neutrophils, 4-5, 13
 Lymphocytes, 4-5, 14
- Red cells
 Abnormalities, generally, 20-25
 Agglutination of, 27, 33, 123, 126, 130, 188
 Dysplastic, 43, 169
 Normal, 20-29, 30-35
 Normocytic, 20, 23, 150
 Normocytic, normochromic, 20, 22, 30, 133, 150
 Normocytic, hypochromic, 20-22, 30
 Nucleated, 191
 Macrocytic, 21, 30, 125, 133, 169
 Macrocytic, round, 21, 30, 125
 Microcytic, 21, 30-31, 133, 169
 Polychromatophilic, 19, 22-23, 33
Red cell aplasia, 20-21, 118, 120
Red cell enzymopathies, 25-26, 118, 121, 123
Red cell membrane disorders, 121
Red cell precursors
 Dysplastic, 41, 43-44
 Megaloblastic, 39, 42-43
 Normoblastic, 38-40, 42-43, 202,
Refractory anemia (RA), 165-168
Refractory anemia with excess blasts-1 (RAEB-1), 165-166
Refractory anemia with excess blasts-2 (RAEB-2), 165-166
Refractory anemia with ring sideroblasts (RARS), 165-166
Refractory cytopenia with multilineage dysplasia (RCMD), 165-166
Refractory cytopenia with multilineage dysplasia and ring sideroblasts (RCMD-RS), 165-166
Renal disease, anemia, associated with Reticulocyte, 38, 43, 132
Richter syndrome, 171, 174
Ring sideroblast, 35, 40, 43, 114-115, 165-166
Rosebud, 229
Rouleaux, 27, 33, 177, 179, 180, 188
Rubriblasts. See Pronormoblast
Russell bodies, 90, 177
Sarcoidosis, 64
Schistocytes, 10, 27, 30, 33, 116-117, 121, 125, 126-131, 148
Scratch marks, 3, 10
Sézary cells, 75, 83, 172
Shrinking artifact, 4-5, 11, 12
Sickle cells (drepanocytes), 4, 21, 23, 32, 126, 188-189
Sickle-like cells, 11, 33, 189
Sickle cell anemia, 22, 76, 126

Index

Sickle cell trait, 4, 13
Sideroblasts, 35, 40, 43, 114-115, 165-166
Sideroblastic anemia, 21, 114-115, 116
Siderocytes, 35, 40-41, 43
Smudge cells, 5, 12, 154, 173, 205
Spherocytes, 21, 23, 27, 32, 122, 126-131, 185, 186
Squamous cells, 3, 10
Spur cells, 24
Stain precipitate (deposits), 3, 10
Stomatocytes, 5, 25, 32, 123-124, 171
Stomatocytosis, 25, 122-123
Target cells (codocytes, leptocytes), 23, 31, 115, 116-117, 125, 126
Tear drop cells (dacryocytes), 4, 26, 33, 116-117, 163, 189
Tear drop-like cells, 11, 189
Thalassemias, 21, 26, 38, 113, 118-121
Thalassemia-like syndromes, 114
Thalassemia major (homozygous), 21, 28, 38, 113, 117
Thalassemia minor (trait), 21, 28, 38, 113-114
Thrombocythemia, 94
Thrombocytopenia, 27, 95, 145, 171, 177
Thrombocytopenic thrombocytosis, 8, 198
Thrombocytosis, 94, 162
Toxic granulation, 4, 12, 70, 71, 135, 139
Toxic vacuolation, 12, 70, 71, 135
Toxoplasma, 107
Triangulocytes. See Schistocytes
Trypanosome, 108, 111
Tuberculosis, 67, 105
Uremia, 46
Vacuolation, 4, 11, 70, 71, 76, 172, 173-174
Vitamin B₁₂ deficiency, 22, 38, 40, 45, 94-95, 133-134, 138, 142
Vitamin E deficiency, 24
Waldenström macroglobulinemia, 7, 27, 74
White cell clumping, 8
White cell karyorrhexis, 205
Wipe mark, 3
Wiscott-Aldrich syndrome, 181-182
Wuchereria, 109