Subject Index

Note:

Page numbers in **bold** indicate major discussions.
Page numbers in *italics* refer to figures, or tables.

A

AA amyloid 50
AA amyloidosis 52
Abetalipoproteinemia 86, *87*
Abortions, spontaneous 287
Abscess
  amebic *277*
  chronic 226, *227*
  cranial 212
  formation in appendicitis 214
  hepatic 212
  pericecal 212
  pulmonary 212
  renal 212
  septicopyemic excretor 212
  soft tissue *213*
  Staphylococcus aureus 212
Abscess-forming granulomas 228
Abscess-forming inflammation 212, *255*
Absolute iron deficiency 72
Absorption vacuoles, Graves disease 120
Absorptive steatosis 84
Acantholysis, radiation dermatitis 154
Acanthosis nigricans 354
Acatalasemia 24
Accidental cell death 130
Acetaldehyde 144
β-Acetyl galactosidase defect 94
Achondroplasia 16, *17*
Acinic cell adenocarcinoma 372
Acoustic neurinoma, NF-2 allele defect 324
Acquired immunodeficiency syndrome (AIDS) *see* AIDS (acquired immunodeficiency syndrome)
Acquired melanocytic nevus 366
Acral necrosis, mutilating 264
Acrokeratosis, paraneoplastic 354
ACTH syndrome, ectopic 122
Actin bodies, intermediate filament lesions 34, *35*
Actin filaments 34
Actinic elastosis 56, *57*
Actinic keratosis 150, *151*
Actinomyces israelii 256
Actinomycosis *257*
Actinomycotic glands 256, *257*
Acute disorders 4
Acute local hyperthermia *see* Burns
Acute lymphoblastic leukemia 360
Acute lymphoblastic lymphoma 360
Acute myelogenous leukemia (AML) 360
Acute rejection 178
Addiction, susceptibility to 336
Addison's disease
  familial 24, *25*
  melanin synthesis 112
Adenocarcinomas 372
  acinic cell 372
  bronchogenic carcinoma 378, *379*
  colon *381*
  mucinous, colorectal 380
Adenoma(s) 370, *371*
  adrenal cortex 122, *123*
Adenomatous hyperplasia 118
Adenomatous polyposis coli (APC) gene 324
Adenosine deaminase deficiency 190
Adenoviridae 250, *251*
Adenoviruses, tumorigenesis 332
Adhesion of thrombus 406
Adrenal cortex
  adenoma 122, *123*
  hemorrhagic inflammation *217*
  hyperfunction syndrome 122
  hyperplasia 122
Adrenalitis, autoimmune 186
Adrenogenital syndrome 122, *123*
Adrenoleukodystrophy 24, *25*
Adult-onset diabetes mellitus 78, *79*
Adult polycystic kidney disease 292
Adult respiratory distress syndrome 396
  alveolar damage syndrome 40
AE amyloid 50
Aerogenic dissemination, fungal infection 268, *269*
AF amyloid 50
Agammaglobulinemia, X-linked 188
Age, tumor predisposition 336
Agenesis 300
  renal *301*
Agranulocytosis
  drug-induced 140
  radiation-induced 154
AIDS (acquired immunodeficiency syndrome) 192 *see also* HIV infection
  appendicitis *245*
  lymphadenopathy 192, *193*
  opportunistic pathogens 192
  Pneumocystis carinii pneumonia 278, *279*
Air embolism 412
AL amyloid 50
AL amyloidosis 52
Albinism 96
  melanin synthesis 112
Albino *113*
  tyrosine-negative 112
  tyrosine-positive 112
Alcohol, metabolism 144
Alcohol abuse, tumor development 336
Alcoholic cirrhosis 42, 144, *145*
Alcoholic fatty degeneration of the liver 144, *145*
Alcoholic hepatitis 144
Alcoholism 144
Aleukemic leukemias 358
Alienation 321
Alimentary toxins, associated diseases 144
Alkaptonuria 96, *97*, 114
Allergic rhinitis 168
Allergy
  contact 176
  toxic 141
  transplant 178
Allograft 178
α-fetoprotein (AFP) 326, *327*
Alphaviruses 240
Alternative activation path, complement 162
Alveolar cells, toxic disease 141
Alveolar echinococcosis 282, *283*
Alveolar macrophage 40
Alveolar proteinosis 16
Alveolar pulmonary edema *425*
Alveolitis
  air embolism 412
  extrinsic allergic 174, *175*
  exudative 396, 412
  fibrosing 40
  lymphocytic, sarcoidosis 230
  sclerosing 396
  serous 204, *205*
Alzheimer fibrils 126
Alzheimer plaque *51*, 126
Alzheimer's disease 126
  amyloidosis 50
Amalgam disease 104, *105*

Amanita phalloides 144
α-Amanitine poisoning 144
Amebiasis 276
Amebic abscess *277*
Amebic dysentery 276
Ameboid trophozoites 278
Ameboma 276
Ameloblastoma 382, 384, *385*
Ames test 328
Amino acid metabolism disorders 96 – 100
Ammonia catabolism 100
Amniocentesis, trisomy 21, 288
Amniotic band syndrome 304, *305*
Amniotic fluid embolism 412
Amorphous inclusions 12
Amputations, intrauterine, amniotic band syndrome 304
Amylo-1,6-glucosidase defect, glycogenosis type III 76
Amyloid 48
  AS 50, 126
  of aging *see* AS amyloid
  angiopathy 126
  detection 48
  plaques, prion diseases 252
  structure 50
  types 50
Amyloid A 50, 52
Amyloidosis 48 – 53
  AA 52
  atypical 52
  classification 52
  islet *51, 79*
  Lardaceous spleen type 52, *53*
  multiple myeloma 364
  secondary 52
Amyloid P component 50
Anal atresia *301*
Analphalipoproteinemia 86
Anaphylactic reaction 162
Anaphylactic shock 394
Anaphylaxis
  local 168
  systemic 168
Anaplasia 342
Anaplastic astrocytoma *3*
Anasarca 426
Anemia
  alcohol-associated 144
  drug-induced damage to blood cells 140
  Fanconi, chromosome breakage syndromes 292
  hemolytic 106
  iron deficiency 402
  lead poisoning 142
  megaloblastic 144, 186
  radiation-induced 154
  tumor associated 352
Anemic infarct 414, *415*
  cerebral 420
  renal 420
  splenic 418
Aneuploidy, nuclear 8
Aneurysm(s) 62, 408
  aortic *see* Aortic aneurysm
  classification 62
  dissecting 60, 62, *63*
  false 62, *63*
  location and etiology 62
  myocardial 418
  types 62, *63*
Angiogenic factors
  non-tumor 344
  tumor-associated 344
Angiographic symptoms 344
Angiokeratomas, Fabry disease 94
Anichkov cells, rheumatic granuloma 234
Ankylosis, rheumatoid granuloma 234
Annular layers 12, *13*
Annular ulcerating carcinomas, colorectal 380, *381*
Anomalies, definition 294
Anopheles mosquito, malaria 278
Anterior fusion failure 300
Anterior wall infarcts 418
Anthracosis 104, *105*
Anthrax 216, 258
Antibacterial protection, HLA antigens 164
Anti-basement membrane antibodies *183*
Antibiotic enterocolitis 208, 258, *259*
Antibodies 160 – 162
  antinuclear *see* Antinuclear antibodies
  basement membrane *183*
  CMV antibodies 248
  cytoplasmic *185*
  formation 160
  to HBV 248
  intrinsic factor 186
  to lipoid 262
  microsomal 186, *187*
  myoglobulin 182
  parietal cell 186
  structure 160
  thyroglobulin 186, *187*
  treponemal 262
  TSH receptor 186
Antibody-mediated cytotoxic hypersensitivity reaction *see* Hypersensitivity reactions
Anti-cytoplasmic antibodies *185*
Antigen(s) 156
  contact 166
  differentiation 326
  neutralization 156
  oncofetal 326
  presentation mechanism *159*
  tumor 326
Antigen – antibody reaction 162, *163*
Anti-HBV antibodies 248
Anti-intrinsic factor antibodies 186
Anti-lipoid antibodies 262
Anti-microsomal antibodies 186, *187*
Anti-myoglobulin antibodies 182
Antinuclear antibodies 10, *11*
  dermatomyositis 182
  scleroderma 182
  systemic lupus erythematosus 180, *181*
Anti-oncogenes *see* Tumor suppressor genes
Anti-parietal cell antibodies 186
Anti-thyroglobulin antibodies 186, *187*
Anti-treponeme antibodies 262
α_1-Antitrypsin deficiency 44
Anti-TSH receptor antibodies 186
Antiviral protection, HLA antigens 164
Anuclear cells 10
Aortic aneurysm
  dissecting 60
  Marfan syndrome 48, *49*
Aortic atrophy, Marfan syndrome *49*
Apallic syndrome 316
Apical cell edema 32, *33*
Aplasia 300
Aplastic form, thrombocytopenia 400
Apolipoprotein E, defect 88
Apoptosis 128, *129,* 132, *133,* 174
  atrophy 124
  defective in tumor development 338
  embryogenesis 296
  inductors 128
  inhibitors 128
  ischemia, chronic relative 416
  mitochondrial regulators 322
  sequence 128
  triggers 128
Apoptosis blockade, viral tumorigenesis 332
Apoptotic body formation 132, *133*
Appendicitis 214, *215*
Appendix, carcinoid tumor 384, *385*
Arachidonic acid derivatives 202
Arachnodactyly, Marfan syndrome *49*
Arachnoid cell tumor 368
Arboviruses 240
Arcus senilis 88
Arenaviridae 242
Argyria 104
Arterial disease, toxic 141
Arterial hemodynamic disorders 414 – 421
Arterial hypertension 386 – 389

Arterial injury, radiation 152
Arterial occlusion 414
Arterial thromboembolism 412
Arterial thrombosis 408
Arteriolar vasoconstriction, transient, inflammation 196
Arteriosclerosis, Mönckeberg 134, *135*
Arteritis
lupus 180
temporal 58, *59*
Artery
functional occlusion 414
structural occlusion 414
Arthrochalasis multiplex congenita 38
Arthus reaction, local immune complex disease 174
Arylsulfate A deficiency 94
AS amyloid 50
Alzheimer disease 126
Asbestos, tumorigenesis 334, *335*
Asbestos bodies 142, *143*
Asbestosis 142
Asbestos lung 142
Ascending infection, pyelonephritis, acute bacterial 214
Aschoff cells, rheumatic granuloma 234
lesion 234, *235*
Ascites 392
Aspergilloma 272
Aspergillosis 272, *273*
allergic bronchopulmonary 272
Aspergillus 272
Aspergillus fumigatus *273*
Aspergillus pneumonia *273*
invasive necrotizing 272
Aspergillus sepsis 272, *273*
Aspiration cytology 2
Assimilation phase, heterophagy 26
Asthma, bronchial 168, *169*
Asthma triad 168
Astrocytoma(s) 368
anaplastic *3*
pilocytic *3*
Atavism 300
Ataxia telangiectasia 190, *191*
chromosome breakage syndromes 292
Atheromatous plaque, endothelial erosion 418
Atherosclerosis 90, *91*
Atherosclerotic plaque 90
Atherosclerotic ulcer 90, *91*
Atomic bomb 154
Atopic dermatitis *169*
Atopic reaction 168
Atresia 300
anal *301*
Atrial dilatation, cardiac thrombosis 408
Atrophic epidermal ridges *183*
Atrophic striations, Marfan syndrome 48
Atrophy 124–127
cerebral *see* Cerebral atrophy
compressive 124
of disuse 124
due to inanition 124
endocrine 124, *125*
follicular 192, *193*
Golgi apparatus 16
muscle *125*
organs 69, 126
senile 124
smooth endoplasmic reticulum 14
trabecular 126
vascular 124
Auramine rhodamine stain, tuberculosis bacteria 264
Autoantibodies *see also* Antibodies
antinuclear *see* Antinuclear antibodies
mitochondrial 22
Autoantigens, autoimmune disorders 180
Autocrine secretion 321
Autograft 178
Autoimmune adrenalitis 186
Autoimmune disorders 180–187
HLA-DR loci 164
specific organs 186
systemic 180–185
Autoimmune gastritis 186, *187*
Autolysis 5, 132
Autophagic cell destruction 124
Autophagy *29*
lysosomal phase 28
prelysosomal phage 26
Autopsy 5
Autosite 298
Autosomal chromosomal aberrations 287–290
numeric 288
structural 288–290
Autosomal dominant inheritance, single-gene disorders 292
Autosomal recessive inheritance, single-gene disorders 292

B

Bacillus anthracis 258
Bacteremia 222
Bacterial infection **254–267**
fetal inflammation 220
Bacteria without a cell wall 266
Balanitis, herpetic 246
Balanoposthitis, candidal 270
Basal cell carcinoma 384, *385*
Basal cell papilloma 370
Basement membrane 36
diabetes *81*
Basophilic cytoplasmic inclusion bodies 250
Basophils 200
Bassen–Kornzweig syndrome 86, *87*
Bazex syndrome 354
B cell (lymphocyte) 160
mature, chronic lymphoblastic leukemia 360
reaction *161*
B-cell lymphoma(s) 342
diffuse large 364
Bcl-2 322
apoptosis 128
Bear meat consumption, Trichinella spiralis 284
Bear-paw collagen 38, *39*
Beef tapeworm *(Taenia saginata)* 280, *281*
Bence-Jones proteinuria, multiple myeloma 364
Benign prostatic hyperplasia 118, *119*
Benign tumors 320
characteristics 350
DNA content 342
epithelial 370
nonepithelial 355
Berry aneurysm 62, *399*
hemorrhage 398
β-hemolytic streptococci 254
Bile thrombi 110
Bilharziosis 280
Biliary cirrhosis 42
primary, autoantibodies 22
secondary 110
Biliary disease, liver toxins 141
Bilirubin
catabolism 108, 110
conjugation defect 108, 110
conjugation inhibition 110
excretion defect 110
production, excessive 108
uptake defects 108
Bilirubin uridine diphosphate glucuronyl transferase deficiency 108
Billowing mitral valve syndrome 60, *61*
Biochemical convergence 342
Biologic records, longevity 124
Bivalent metals, tumorigenesis 334
BK type, miopapovaviridae 250
Black pigment calcified gallstones 138
Bladder
infection, hemorrhagic viral 216, *217*
porcelain *47*
trabeculae 118
Blastogenic disorders 298
definition 294
Blastomatous lymphangitis 346
Bleeding *see also* Hemorrhage
intestinal 402
through ruptures 398
urogenital 402
Blistering, burns 146

Blood cells, drug-induced damage 140
Blood flow
  accelerated and thrombosis 404
  slowed and thrombosis 404, *405*
Blood group O, Helicobacter pylori 262
Blood turbulence, thrombosis 404
Bloom syndrome 292
Blue nevi 366
B lymphocytes *see* B cell (lymphocyte)
Bone
  anemic infarct *415*
  cancellous *see* Cancellous bone
  destruction by tumor *353*
  echinococcosis 282
  idiopathic necrosis 130, *131*
  tumors 358
Bone marrow 157
  chronic myelogenous leukemia 360
  embolism *413*
Bone mineralization syndrome 136
Bony callus, fracture healing 314, *315*
Borderline tumors 340
Border zone infarct 420
Borrelia burgdorferi 262, *263*
Botulinum toxin 258
Botulism 258
Bovine spongiform encephalopathy (BSE) 252
Brachydactyly, trisomy 21, 288
Bradykinin 202
Bradyzoite, Toxoplasma gondii 276
Brain atrophy *see* Cerebral atrophy
Brain death 5
Brain injuries
  closed 316
  open 316
Brain tumours 366–369
BRCA1, breast carcinoma 376
Breast carcinoma 376, *377*
Bremsstrahlung traces 152, *153*
Bronchial asthma 168, *169*
Bronchial disease, toxic 141
Bronchial ectasia, cystic fibrosis 64, *65*
Bronchioalveolar carcinoma 378, *379*
Bronchitis, chronic 224
  atrophic *225*
  hypertrophic *225*
  mucopurulent 224
  suppurative *213*
Bronchogenic carcinoma 378, *379*
Bronze diabetes, hemochromatosis 72
Brown colon 114, *115*
Brown pigment gallstones 138
Bruton agammaglobulinemia 188
BSE 252
Bullous emphysema *45*
Burkitt lymphoma *333*
  Epstein–Barr virus (EBV) 332
Burns 146
  fat embolism 412
Burn toxins 146
Bursa of Fabricius 157
Butterfly erythema, systemic lupus erythematosus 180, *181*

C

Cachexia 124, *125*, 322
  cancer 352
Cadherins 346
  cell contact mechanisms 295
Café au lait macules, NF-1 gene mutation 324, *325*
Calcergy syndrome 136, *137*
Calcification **134–139**
  degenerative 134
  dystrophic 134–136, 350
  thrombus 408
Calcinosis cutis 134, *135*
Calciphylaxis syndrome 134
Calcium
  metabolic disorders 70
  metabolism *71*
  serum concentration 70
Calcium oxalate crystals
  hyperoxaluria, primary 98
  urinary calculi 138
Calcium phosphate urinary calculi 138
Calculi
  pancreatic 70
  renal pelvic *139*
  salivary 70
  urinary 138
Callus 40
  fracture healing 314
  whitish gray, old infarction 418
Calor 194
Calymmatobacterium granulomatis 266
Campylobacter coli 262
Campylobacter jejuni 262
Canalicular metastasis 348
c-ANCA, Wegener granulomatosis 184
Cancellous bone *127*
  chondrodystrophia fetalis *17*
  osteomalacia *83*
  osteoporotic *127*
Cancer 320 *see also* Carcinoma; Tumor; individual cancers
Cancer cachexia 352
Cancer "crater," *351*
Candida albicans 270, *271*
Candidiasis
  chronic myocutaneous 189
  deep 270
  oral 270
  superficial 270
Canine tapeworm (Echinococcus granulosus) 282, *283*
Capillary injury, radiation 152
Caput medusae 392, *393*
Carbohydrates
  deficient metabolism 78–81
  malabsorption 78
  metabolic disorders 76–81
Carbon monoxide poisoning 142
Carcinoembryonic antigen (CEA) 326, *327*
  colorectal carcinoma 380
Carcinogenesis, stages 328
Carcinogens 328
  activation in tissue 330, *331*
  organ and species specificity 330
Carcinoid tumor
  appendix 384, *385*
  small bowel 56
Carcinoma 320, 374–381
  breast 376, *377*
  early invasive 340
  mucinous *3*
  prostate 374, *375*
Carcinoma in situ 340, *341*
Cardiac echinococcosis 412, *413*
Cardiac edema 424
Cardiac failure 408
Cardiac hypertrophy *117*, 388
Cardiac insufficiency 22, 424
Cardiac rupture 418
Cardiac tamponade 398, *399*
Cardiac thrombosis 408
Cardiogenic shock 394
Cardiomyopathy
  alcoholism 144
  hypertrophic 116
Cardiovascular disorders
  generalized **386–403**
  localized **404–423**
Cardiovascular hypertension 388
Cardiovascular lesions, Marfan syndrome 48
Carnitine deficiency 24
Carotene disease 104
Carpal tunnel syndrome, AL amyloidosis 52
Cartilage calcification, hemochromatosis 72
Cartilage tumors 358
Caseation 130
Caseous granulomas 228
Caspase 128
Cataracts
  diabetic 80
  rubella 240, *241*
  sunflower 74
Catenated form of mitochondrial DNA 20

Cats eye amaurosis 290
Cavitary metastasis 348
c-bcl 2, 322
C-cell carcinoma *51*
CD3 158
CD4+ T cells 158
CD8+ T cells 158
Celiac disease 82
Celiac sprue 82
Cell(s)
  anuclear 10
  cervical epithelial *3*
  determination 296
  differentiation 296
  mesothelioma *3*
  motility 321
  polynuclear 10
  proliferation 295 – 296
Cell contact mechanism 295
  tissue repair regulation 309
Cell cycle
  cell sensitivity to radiation 152
  melanogenesis 112
Cell death *see also* Apoptosis
  accidental 130
  sublethal **116 – 127**
Cell death protease 128
Cell-derived mediators, inflammation 202
Cell injury
  chemical **140 – 145**
  lethal **128 – 133**
  physical **146 – 155**
Cell-mediated hypersensitivity reactions *175*
Cell-mediated immunity 156, 158
  tumor cells 326
Cell migration 296
  metastasis 346
Cellular changes, tumorigenesis 342
Cellular communication, disturbed 321
Cellular edema 426
Cellular fusion 10
Cellular immortality 321
Cellular pathology **6 – 35**
Cellular vagrancy 321
Cellulitis
  acute 212
  appendicitis 214
Central bronchogenic carcinoma 378, *379*
Central nervous system
  acute infarct *421*
  old infarct *421*
  wound healing 316
Centrilobular emphysema 44, *45*
Centripetal fibrosis, sarcoidosis 230
Cephalopagus 298, *299*
Ceramide trihexosidase (α-galactosidase A) 94
c-erb A 322
c-erb B2 322, *323*
Cercaria, Schistosomes 280
Cerebellar cortex, degeneration 354
Cerebellum, acute infarct *421*
Cerebral abscess 212
Cerebral arteriosclerosis 416
Cerebral atrophy *127*
  Alzheimer disease 126
  prion diseases 252
Cerebral contusions 316
Cerebral cortex necrosis, drug induced 141
Cerebral degeneration, mucopolysaccharidoses 66
Cerebral edema 428, *429*
  perifocal 316
Cerebral herniation *429*
Cerebral hypertension 388
Cerebral infarction
  anemic 420
  hemorrhagic 422, *423*
Cerebral purpura *413*
Cerebral sinus thrombosis 408
Cerebral stroke 398
Cerebrohepatorenal syndrome 24, *25*
Cerebroside lipidosis (Gaucher disease) 92, *93*
Cerebroside sulfate enzyme deficiency 94
Cerebrospinal fluid fistula, open brain injury 316
Cerebrospinal meningitis, Neisseria meningitidis 256
Ceroid 28, *29*, 114
Cervical carcinoma *333*
  environmental factors 336
Cervical epithelial cells *3*
Cestodes 280 – 283
c-fms 322
c-fos 322, *323*
Chagas disease 274
Chagas myocarditis *275*
Chagomas 274
Chain-link fibrosis, alcoholic hepatitis 144
Chalcosis 104
Charcot-Leyden crystals 168
Chédiak – Higashi syndrome 30
Chemical cell injury **140 – 145**
Chemical toxins, diapedesis 398
Chemical tumorigenesis 328 – 331
Chemokinetic substances, leukocyte transmigration 200
Chemotactic substances, leukocyte transmigration 200
Chemotaxis 162
Chicken fat clot 408
Chickenpox 246
Childhood syphilis 306
Childhood tumors 336
Chiragra 102
Chlamydia 266
  atherosclerosis 90
  cervicitis *267*
  genital infection 266
Chlamydia trachomatis *267*
Cholelithiasis 138
Cholemic nephrosis 110, *111*
Choleragen 262
Cholestasia, Golgi apparatus 16
Cholestasis *111*
  extrahepatic 110
  extralobular intrahepatic 110
  intralobular intrahepatic 110
Cholesteatoma 318
Cholesterol embolism 412, *413*
Cholesterol gallstones 138, *139*
Cholesterol pigment gallstones 138, *139*
Chondrocalcinosis, hemochromatosis 72
Chondrodystrophia fetalis 16, *17*
Chondroma 358
Chondrosarcoma 358, *359*
Chordoma 382, 384, *385*
Chorea, Sydenham 234
Chorioangiopagus 298
Choriocarcinoma 326, *327*
Chorionic gonadotrophin (β-HCG) 326
Chorista 300
Choristoma 318
Chromatin change 8
Chromogranin expression 388
Chromosomal disorders 287 – 292
  definition 294
Chromosome(s) 6
  structure 6, *7*
Chromosome 14
  heavy chain defect 188
  single point mutation and primary α_1-antitrypsin deficiency 44
Chromosome 21, Alzheimer disease, 126
Chromosome aberrations
  abortions, spontaneous 287
  numeric 286
  primary 342
  secondary 342
  sex 290
  structural 286
  tertiary 342
  tumorigenesis 342
Chromosome breakage syndromes 290 – 292
Chronic disorders 4
Chronic hypoxia 69
Chronic lymphoblastic leukemia (CLL) 360, *361*
Chronic lymphocytic leukemia (CLL) 364
Chronic myelogenous leukemia (CML) 360, *361*
Chronic rejection 178
Chronic unconjugated hyperbilirubinemia without hemolysis 108
c-hst 322

Chylomicron-micelles, hyperlipoproteinemia *89*
Cigarette smoke
bronchitis, chronic 224
bronchogenic carcinoma 378
tumors 336
Ciliated respiratory epithelium 318
c-int-2 322
Circular dimeric form of mitochondrial DNA 20
Circulatory disruption, tumor complications 352
Cirrhosis of liver 42, *43*
alcoholic 42, 144, *145*
biliary 22, 42
cholestatic *111*
congestive 42
cryptogenic 42
in cystic fibrosis 64
macronodular 42, *43*
metabolic 42
micronodular 42, *43*
pancreatic 72
posthepatitic 42
secondary biliary 110
toxic 42
Wilson's disease 74, *75*
Cistern collapse, rough endoplasmic reticulum 12, *13*
Cistern number, rough endoplasmic reticulum 12
c-jun 322
Classic activation path, complement system 162
Clinical autopsies 5
Clinical course of disease 4
Clinical records
cardiac arrest with secondary hypoxia 68
gallstones 138
heat-induced injuries 146
hypothermia 148
multiple births 298
obesity 84
starvation 124
Clonorchis sinensis, tumorigenesis 334
Clostridia 258
Clostridial gas gangrene 258, *259*
Clostridium botulinum 258
Clostridium difficile 258, *259*
Clostridium tetani 258, *259*
c-mil 322
c-mos 322
CMV *see* Cytomegalovirus (CMV)
c-myb 322
c-myc 322
Coagulase, staphylococci infections 254
Coagulation disorders 402
Coagulative necrosis, ischemia, acute temporary necrosis 416
Cobblestone mucosa, Crohn's disease 230
Coccidioides immitis 272
Coccidioidomycosis 272, *273*
Cold erythema 148
Cold-induced injuries 148
Cold injury 148
Colitis
hemorrhagic 260
pseudomembranous *209*
ulcerous 218, *219*
ulcerous amebic 276
Collagen 36
hyalinization 46
lesions 36–47
types 36–37
Collagen biosynthesis 36
disorders 38–43
Collagen diseases 46
Collagenolysis 36
disorders 44–46
Collateral circulation 414
development, portal hypertension 392
Colloid goiter 120
Colon, brown 114, *115*
Colonization, metastasis 346
Colorectal carcinoma 380
metastases 380
Colorectal polyposis *381*
Common cold 204, *205,* 240
Common variable immunodeficiency (CVID) 189
Compensatory emphysema 44
Compensatory hypertrophy 116
Complement system 162
cascade *163*
effects 162
Complete remission 350
Compound nevi 366
Compression, mesenchymal metaplasia 318
Compressive atrophy 124
C-onc genes *see* Proto-oncogene (C-onc genes)
Condyloma, flat 250, *251*
Condyloma acuminatum 250, *251*
Congenital disorder, multiple malformations 302
Congenital erythropoietic porphyria 106
Congenital forms, mitochondrial DNA mutation 20
Congenital malformations **294–307**
exogenous causes 295
Congenital nevocellular nevus 366
Congenital rubella syndrome 240
Congenital syphilis 306
Congested lung *41,* 210
Congestion fibrosis 40
Congestive cirrhosis 42
Conglomerate tumor, Crohn's disease 230
Conjoined twins 298, *299*
equal 298
nearly equal 298
parasitic unequal 298
Conjunctival ecchymosis *401*
Connective tissue callus, fracture healing 314, *315*
Connective tissue lesions **36–67**
Conn syndrome 122
Contact allergy 176
Contact dermatitis 176, *177*
drug-induced skin disease 140
Contact eczema *177*
Contact healing, fractures 314, *315*
Contact inhibition of proliferation 295
loss and tumor dissemination 344
Contact stimuli, loss of response 344
Contrecoup injury 316, *317*
Copper metabolism 54
disorders 74
Cord factor, tuberculosis bacteria 264
Cornea
calcification, hypercalcemia 70
transplants, prion diseases 252
Coronary arteriosclerosis 416
Coronary artery
collateral insufficiency 418
spasm 418
stenosis *419*
thrombus *419*
Cor pulmonale
acute, pulmonary embolism 410
chronic 390, *391*
pulmonary embolism 410
Cortical infarcts 420
Corynebacterium diphtheriae 256, *257*
Coryza (common cold) 204, *205,* 240
Cosmetic pigments 104
Councilman bodies
hepatitis A virus infection 240, *241*
hepatitis B virus infection 248
Coup injury 316
Cowdry bodies, herpes simplex virus infection 246
Cranial abscess 212
Craniofacial defects, amniotic band syndrome 304
Craniofacial dysplasia, trisomy 18, 288
Craniopharyngioma 382, 384
c-ras 322
C-reactive protein (CRP) 202
c-rel 322
CREST syndrome 182
Creutzfeldt–Jakob disease 252, *253*
Cribiform carcinoma 372

Cri du Chat syndrome 288
Crigler – Najjar syndrome 108
Crista inclusions 20, *21*
Crohn disease 230, *231*
Crossed embolisms 410, *411*
Croup 208
Croupous inflammation 206
Crucifixion 396
Cruor 408, *409*
Cryptococcosis 270
  cerebral *271*
Cryptococcus neoformans 270, *271*
Cryptogenic cirrhosis 42
Crystalline foreign bodies, granuloma 236
Crystalline inclusions 12
CSF brain barrier impairment, drug induced 141
c-sis 322
c-src 322
Cumulative dose, chemical carcinogens 330
Current intensity, classification of electrical injury 150
Curschmann spirals 168
Cushing syndrome 122, 354
Cutaneous anthrax 258
Cutaneous basophilic hypersensitivity reaction 176
Cutaneous edema *425*
Cutaneous melanin 112 – 114
Cutaneous mycoses 268
Cyclical regeneration 309
Cyclin A overexpression, hepatitis B virus infection 332
Cyclopia *303*
Cyst(s) 300
  ovarian dermoid 382, *383*
  Pneumocystis carinii 278
  traumatic epidermal 312, 318
Cystadenocarcinomas 372
Cystadenoma 370
Cystathionine synthetase deficiency 98
Cysteine stones 100
Cysticercosis 282
Cysticercus stage
  Taenia saginata 280
  Taenia solium *283*
Cystic fibrosis 64
Cystic fibrosis transmembrane conductance regulator (CFTR) 64
Cystic kidney *301*
Cystic medial necrosis 60, 62, *63*
Cystic vascular degeneration 60
Cystine storage disease 100, *101*
Cystine transport deficiency 100
Cystine urinary calculi 138
Cystinosis 100, *101*
Cystinuria 100, *101*
Cytoclastic form, thrombocytopenia 400
Cytogenetic studies, trisomy 21, 288
Cytokines, macrophage-controlled 174
Cytology 2
Cytolysis 162
Cytomegalovirus (CMV) 248, *249*
  fetopathy 306
  giant nucleoli in infected cells 10, *11*
Cytomembrane lesions 32
Cytoplasmic antineutrophil cytoplasmic autoantibody 184
Cytoplasmic bleb formation, apoptosis 132
Cytoplasmic inclusions 8
Cytoplasmic secondary nuclei 14, *15*
Cytoskeletal lesions 34 – 35
Cytotoxic cerebral edema 428
Cytotoxic reaction *see* Hypersensitivity reactions
Cytotoxic T lymphocytes 158

D

Dawson encephalitis, measles virus infection 242
DCC gene 324
  colorectal carcinoma 380
Death, signs of 5
Decomposition, body 5
Defect repair 310 – 319
Deformation, embryopathies 300
De Grouchy syndrome 288
Delayed enzyme release 30
Delayed hypersensitivity reaction 174 – 177
Deletion syndrome 288
Demarcation stage, anemic cerebral infarction 420
Demyelination, Tay-Sachs disease 94
Dengue 240
Dermatitis *see also* Eczema
  atopic *169*
  contact *see* Contact dermatitis
  exfoliative *255*
  radiation 154
Dermatitis herpetiformis 82
Dermatological disorders, paraneoplastic syndromes 354
Dermatomycoses 268, *269*
Dermatomyositis 182, *183*
Dermatopathy, edema 426
Dermatophytoses 268
Desmin 34
Detection phase, heterophagy 26
Developmental growth, apoptosis 296
Diabetes mellitus 78 – 80
  mitochondrial 293
  secondary in cystic fibrosis 64
  type I (insulin dependent) 78, *79*, 186
  type II (non-insulin dependent) 78, *79*
Diabetic cataract 80
Diabetic embryopathy 80, 302
Diabetic fetopathy 306, *307*
Diabetic gangrene *81*
Diabetic glomerulosclerosis 80, *81*
Diabetic liver 80
Diabetic macroangiopathy 80
Diabetic microangiopathy 80
Diabetic neuropathy 80
Diabetic retinopathy 80, *81*
Diapedesis 398
Dicephalus 298
Dietary factors, tumor development 336
Dietary steatosis 84
  liver *85*
Differentiation antigen 326
Differentiation compartment, tissue repair 308
Differentiation gene defects 338
Diffuse alveolar damage syndrome 40
Diffuse angiokeratoma (Fabry disease) 94, *95*
Diffuse bronchogenic carcinoma 378
Diffuse goiter 120, *121*
Diffuse infiltrating carcinomas 380
Diffuse necrotizing inflammation 218
Diffuse subtype Hodgkin's lymphoma 362
DiGeorge syndrome 189
Digestion phase, heterophagy 26
Dilated cardiomyopathy, interstitial fibrosis 69
Dimorphic fungi 272
Diphtheric laryngotracheitis 208
Diphtheroid pseudomembrane 208, *209*
Diploidy, nuclear *9*
Dipygus 298
Direct embolism 410
Direct metaplasia 318
Disease, definition 4
Disorders, definition 4
Disposition to disease 4
Disrupted communication, cells 32
Disruption, embryopathies 300
Dissecting aneurysm 60, 62, *63*
Disseminated encephalomyelitis 186

Disseminated intravascular coagulation 402
paraneoplastic syndromes 354
Disseminated myocardial necrosis 68
Dissemination, forms of 194
Distal intimal exit tear 62
Disturbed regulation 322
DNA
content of tumor cells 342
interference 330
repair defects 6
repair gene mutation, colorectal carcinoma 380
structure *7*
DNAase, Streptococcus pyogenes 254
DNA ladders 128
DNA viruses
infection *239*
tumor viruses 332
unenveloped double-stranded 250
unenveloped single-stranded 250
Dolor 194
Donovan inclusion bodies 266, *267*
Down's syndrome 288, *289*
Dracula syndrome 106
Drug-induced damage to blood cells 140
Drug-induced disorders 140–141
kidney disease 141
liver disease 141
lung disease 141
neurological disorders 141
skin disease 140
Drug use, tumor risk factors 336
Dubin–Johnson syndrome 110, *111*
Ductal carcinoma of the breast 376, *377*
Dural ectasia, Marfan syndrome 48
Dwarfism 16
mucopolysaccharidoses 66
Dysbetalipoproteinemia, hyperlipoproteinemia type III 88
Dysentery, amebic 276
Dyskaryosis 8
Dysontogenetic tumors 382
Dysplasia
definition 294
epithelial 340
Dysplastic nevi 366
Dysraphia 300
Dystrophic calcification 134–136
tumor regression 350

E

E1A adenovirus transforming gene 332
E1B adenovirus transforming gene 332
E6 HPV transforming gene 332
E7 HPV transforming gene 332
Early recurrence 350
Ecchymosis *403*
Echinococcal hydatid embolism *413*
Echinococcosis 282, *283*
Echinococcus granulosus 282, *283*
Echinococcus hydatidosus 282
Echinococcus multilocularis 282
Ectopic ACTH syndrome 122
Eczema *see also* Dermatitis
contact *177*
seborrheic 176, *177*
Edema **424–429**
alveolar pulmonary *425*
apical cell 32, *33*
cardiac 424
cellular 426
cerebral 428, *429*
cutaneous *425*
hydrostatic 424
inflammatory 424
laryngeal *205*
mucous membrane, asthma 168
noninflammatory 424
oncotic 426
osmotic 424
pathogenesis *425*
perifocal cerebral 316
peripheral *425*
portal 424
Quincke 426, *427*
vascular 424, 426
Edwards syndrome 288, *289*
Egg granulomas, *Schistosoma* 280
Ehlers-Danlos syndrome (EDS) 38
type I-III 38
type IV 38
type V 54, *55*
type VI 38
type VII 38
Elastic deformation, mesenchymal metaplasia 318
Elastic pulmonary arteries, pulmonary hypertension 390
Elastin 36
biosynthesis 54
biosynthesis disorders 54
lesions 54–59
Elastin lysis 54
deficiencies 58
Elastosis 40, 56
actinic 56, *57*
Electrical burns 150, *151*
Electrical injuries 150
Elementary bodies, Chlamydia 266
Elephantiasis 284, 426
Elimination compartment, tissue repair 308
Embolism 410–413
air 412
amniotic fluid 412
bone marrow *413*
cholesterol 412, *413*
crossed 410, *411*
echinococcal hydatid *413*
fat 412, *413*
paradoxical 410
peripheral pulmonary 410
pulmonary 410, *411*
recurrent 410
shrapnel 410
straddling 410, *411*
tumor *349*
Embolus phase, hematogenous metastasis 348
Embryo, inflammation 220
Embryonal tumours 382
Embryopathy 300–307
definition 294
diabetic 80, 302
morphogenetic forms 300–302
radiation 302
thalidomide 302
Embryotoxic injury 294
Emphysema 44
bullous *45*
compensatory 44
obstructive 44
senile 44
Empyema 212
pleural *213*
Encephalitis
Dawson 242
hemorrhagic 238
herpetic 246
HIV 192, *193*
toxoplasma *307*
viral 238
Encephalocele *305*
Encephalomalacia 420
Encephalopathy
bovine spongiform (BSE) 252
limbic 354
mitochondrial hereditary disorders 293
saturnine, lead poisoning 142
shock 396
Endangiitis obliterans 148
Endocardial fibroelastosis 56, *57*
Endocardial lesions, cardiac thrombosis 408
Endocarditis *409*
Libman–Sacks 180, *181*
shock 396
Endocrine amyloid 50
Endocrine atrophy 124, *125*
Endocrine hyperplasia 118, 120–123
Endocrine hypertension 388
Endocrine hypertrophy 116
Endocrine shock 394
Endocrinopathy 354
shock 396

Endogenous antigens, type III hypersensitivity reactions 170
Endogenous asthma 168
Endogenous pigments 104, 106–115
Endometrial hyperplasia 118, *119*
Endometriosis 318
Endomyocarditis 234
Endophytic papillomas 370
Endothelial cells 200
  contraction, extravasation regulation 198
Endothelialized thrombus *409*
Endothelial lesion, thrombosis 404, *405*
Endothelial necrosis, extravasation regulation 198
Endotoxins 256, 260
Entamoeba histolytica 276, *277*
Enteritis 260
  radiation 154
  salmonella 260
Enterobacteriaceae 260
Enterobius vermicularis 284
Enterocolitis, antibiotic 208, 258, *259*
Enteropathy, shock 396
Enterotoxin, staphylococci infections 254
Envelope gene, RNA tumor viruses 334
Environmental factors
  disease 4
  tumor development 336
Environmental toxin-associated diseases 142
Enzyme induction, smooth endoplasmic reticulum proliferation 14
Enzyme inhibition disorder, α_1-antitrypsin deficiency 44
Enzyme secretion disorder, α_1-antitrypsin deficiency 44
Eosinophilic cytoplasmic inclusion bodies 246
Eosinophils 200
Epicardium, gelatinous degeneration *85*
Epidemic autopsies 5
Epidermal cysts, traumatic 312, 318
Epidermal wound healing 312
Epidermophyton floccosum 268
Epidural hematoma 316, *317*
Epignathus 298
Epiphyseal cartilage, chondrodystrophia fetalis *17*
Epistaxis 402
Epithelial cells, migration *313*
Epithelial dysplasia 340, *341*
Epithelial hypertrophy *313*
Epithelial mesothelioma *143*
Epithelial metaplasia 318
Epithelial reconstruction *313*
Epithelial tumors
  benign 370
  malignant 372
Epithelioid cell nevi 366
Epithelioid cells, granulomatous inflammation 228
Epithelioid granulomas 174, 228
Epstein–Barr virus (EBV) 248, *249*
  tumorigenesis 332
Erdheim's disease 60, 62, *63*
Erlenmeyer flask flaring of distal femur 92
Erosion
  endothelial, atheromatous plaque 418
  vascular 398
Erosive appendicitis 214
Eruptive xanthomas 90
  hyperlipoproteinemia type I 88, *89*
Erysipelas 212, *213*
Erythema, serous inflammation 204
Erythema gyratum repens 354
Erythema nodosum leprosum 264
Erythrocyte(s)
  agglutination *171*, 278
  proliferation, paraneoplastic syndromes 354
Erythrocyte disease
  lead poisoning 142
  toxic 141
Erythrocytopoiesis elements, acute myelogenous leukemia 360
Erythrodontia 106
Erythrogenic toxins, Streptococcus pyogenes 254
Erythropoietic porphyria, congenital 106
Escherichia coli 260, *261*
  enterohemorrhagic 216
Esophageal cancer, environmental factors 336
Esophageal varices 392, *393*
Esophagitis
  candidal *271*
  herpetic 246, *247*
Essential hypertension 386
Etiology of disease 4
Euchromatin 6
Euploidy, nuclear 8
Euthyroid goiter 120, *121*
Exanthema
  drug-induced skin disease 140
  measles 242
  petechial 266
  scarlet fever 216
Exfoliative cytology 2
Exfoliative dermatitis *255*
Exogenous allergic asthma 168
Exogenous pigments 104
Exophytic papillomas 370
Expansion, tumor 352
Exposure (hypothermia) 148
Extrahepatic block, portal hypertension 392
Extrahepatic cholestasis 110
Extralobular intrahepatic cholestasis 110
Extranodal non-Hodgkin's lymphomas 364
Extraosseous multiple myeloma 364
Extravasation, metastasis 346
Extravasation regulation 198
Extrinsic allergic alveolitis 174, *175*
  local immune complex disease 174
Extrinsic asthma 168
Exuberant callus 314
Exudate 198
Exudative alveolitis 396, 412
Exudative inflammatory reaction 196–203
  acute 204–223
  caseous, tuberculosis 264

F

Fabry disease 94, *95*
Facial deformities, trisomy 21, 288
Facial dysmorphia
  chondrodystrophia fetalis 16
  restrictive dermopathy 54
Facial dysplasia, trisomy 13, 288
Factor VIII deficiency 402
Fahey-Dutcher bodies 8
False aneurysm 62, *63*
False joint 314
Familial Addison's disease 24, *25*
Familial amyloid 50
Familial variation, single-gene disorders 292
Family cancer syndrome 336
Fanconi anemia, chromosome breakage syndromes 292
Fanconi syndrome 100
Fasciitis, necrotizing 218, *219*
Fat
  absorption disorders 82
  catabolism disorders 84–86
  embolism 412, *413*
  intake, tumor development 336
  metabolism, peroxisome involvement 24
  necrosis 132, *133*
  transport steatosis 84
Fat emboli syndrome 412
Fatty degeneration 84
  hypoxia, chronic 69
  of liver *see* Fatty liver
Fatty inclusions 8
Fatty liver 84, *85*
  Golgi apparatus 16
  hepatitis, galactosemia 80

Fatty stools 82, 86
Fatty tissue tumors 356
FBN gene, Marfan syndrome 48
Femoral arteriosclerosis 416
Fetal alcohol syndrome 304, *305*
Fetal hypokinesis, restrictive dermopathy 54
Fetal inflammation 220, *221*
Fetal syphilis 306
Fetal toxoplasmosis 306
Fetopathy 306
  definition 294
α-Fetoprotein (AFP) 326, *327*
Fetotoxic injury 294
Fiber intake, tumor development 336
Fibrillin, Marfan syndrome 48
Fibril protein 50
Fibrinoid necrosis 46, 170
  rheumatoid arthritis 184
Fibrinous exudation *207*
Fibrinous inflammation 206–209, *207*
Fibrinous mucosal inflammation 208
Fibrinous parenchymal inflammation 206
Fibrinous pericarditis 206, *207*
Fibrinous peritonitis 206
Fibrinous pleuritis 206, *207*
Fibrinous serosal inflammation 206
Fibrinous suppurative inflammation 210
"Fibroadenia," spleen 392
Fibroadenoma 370, *371*
  breast *351*
Fibroblastic meningioma 368
Fibroblasts, apoptotic *129*
Fibroelastosis 56
Fibroma 356
Fibrosarcoma 356
Fibrosis 40–43, 310
  centripetal 230
  congestion 40
  cystic *see* Cystic fibrosis
  foreign-body granuloma 236
  interstitial pulmonary 40, 230
  liver 141
  myocardial 72
  obstructive vascular 182
  pulmonary 40, *41, 391*
  radiation, of testis *155*
  reparative interstitial 416
Fibrous gliosis 69
Fibrous tumors 356
Field defects, multiple malformations 302
Fingerprint deceration 14
First-degree burns 146
First-degree frostbite 148
Fish vertebrae deformity 126
Fissural inflammation, Crohn's disease 230
Fistula
  cerebrospinal fluid 316
  chronic 226
Flaccid paralysis, poliomyelitis 238
Flattened specimen examination 2
Flaviviruses 240
Flint stone liver, syphilis 306, *307*
Flush syndrome 354
Foam cells *85*
  granulating inflammations 226
Follicular atrophy 192, *193*
Follicular destruction, progressive 192
Follicular hyperplasia, irregular 192
Follicular lymphoma 364, *365*
Forbes disease 76
Foreign antigens, type III hypersensitivity reactions 170
Foreign bodies
  crystalline 236
  noncrystalline 236
  tumorigenesis 334
Foreign body granuloma 236, *237*
Foreign body inflammation, hyperoxaluria, primary 98
Foreign cells, HLA antigens 164
Fournier gangrene 220
Fourth-degree burns 146
Fourth-degree frostbite 148
Fox tapeworm 282
Fracture callus *315*
Fractures
  healing 314
  healing complications 314
  hematoma 314, *315*
  multiple, fat embolism 412
Fragmentation, rough endoplasmic reticulum 12
Freezing gangrene 148, *149*
Frei intracutaneous test, Chlamydia 266
Frostbite 148
Frost blisters 148
Frosted glass cells, smooth endoplasmic reticulum 14, *15*
Frozen section examination 2
Fructose-1,6-diphosphatase deficiency 78
Fructose intolerance, hereditary 78
Fulminant disorders 4
Functio laesa 194
Function compartment, tissue repair 308
Fungemia 222
Furuncles 212
Fusiform aneurysm 62
Fusion failure
  anterior 300
  posterior 300
Fusion malformations 300
Fusion of cells 10

G

Galactitol accumulation 80
Galactose-1-phosphate accumulation 80
Galactosemia 80
α-Galactosidase A, defect in Fabry disease 94
β-Galactosidase deficiency, GM_1 gangliosidosis 94
Galactosylceramidase deficiency 92
Gall acid biosynthesis 24
Gallstones 138
  cholesterol 138, *139*
  hypercalcemia 70
Gandy-gamma nodules 392
Ganglion 60, *61*
Ganglioneuroblastoma *383*
Ganglioside breakdown impairment, drug induced 141
Gangrene 130, *131,* 412
  diabetic *81*
  gas 258, *259*
Gangrenous appendicitis 214
Gangrenous inflammation 220, *221*
Garden hose phenomenon, Crohn's disease 230
Gargoyle *67*
Gargoylism 66
Gas gangrene, clostridial 258, *259*
Gastric calcinosis 136
Gastric cancer, environmental factors 336
Gastric diapedesis 398
Gastric ulcer 218, *219*
Gastritis, autoimmune 186, *187*
Gaucher cells 92, *93*
Gaucher disease 92, *93*
Gemistocytic astrocytoma 368, *369*
Gender phenotype
  chemical carcinogens effect 330
  Klinefelter syndrome 290
  Turner syndrome 290
  XYY syndrome 290
Gene amplification 322
Generalized infection 194
Genetic changes, tumor risk factors 338
Genotoxic carcinogens 328
Germ cell mutations, tumorigenesis 342
Gerstmann–Sträussler–Sheinker syndrome 252
Giant babies, diabetes 80
Giant cells 10
  multinucleated in granulomatous inflammation 228
  organized 228
  types 10
  unorganized 228

Giant nucleoli 10
Giardia lamblia 274, *275*
Gilbert syndrome 108
Gingivitis, acute necrotizing ulcerous 218, *219*
Gingivostomatitis, herpetic 246
Glandular columnar epithelium 318
Glandular cystic hyperplasia 118
Glandular excretory duct papilloma 370
Glandular hyperplasia, thyroid *121*
Glial filaments 34
Glioblastoma 368, *369*
Gliomas 366 – 368
Gliosis, reparative, poliomyelitis 238
Globoid leukodystrophy 92, *93*
Glomerular disease, toxic 141
Glomerulonephritis *173*
poststreptococcal 172
Glomerulosclerosis, diabetic 80, *81*
Glucose, synthesis disorders 78
Glucose-6-phosphate defect, glycogenosis type I 76
Glucose-6-phosphate deficiency, gout, secondary 102
α(1,4)-Glucosidase defect, glycogenosis type II 76
Glucosylcerebroside lipidosis (Gaucher disease) 92, *93*
Gluten enteropathy 82
1-Glycerate aciduria 98
Glycine metabolism defects, hyperoxaluria, primary 98
Glycogen inclusions 8, *9*
Glycogenoses 76
Glycogenosis type I 76, *77*
Glycogenosis type II 76, *77*
Glycogenosis type III 76
Glycolic aciduria 98
Glycolipid lipidosis 94, *95*
GM_1 gangliosidosis *31, 67,* 94
GM_2 gangliosidosis, type I 94
Goblet cell hyperplasia *319*
Goiter 120, *121*
Goldblatt kidney *387*
renal hypertension 386
Golgi apparatus 16
disorders 14
lesions 16 – 17
secretion by 16
Gonagra 102
Gonococci *257*
Goodpasture antigen 182
Goodpasture nephritis *183*
Goodpasture syndrome 182
Gout 102
Gouty arthritis 102
Gouty nephropathy 102
Gouty tophus *103*
G-proteins 32
Grading of tumors 355
Graft-versus-host disease 178, *179*
Gram negative bacteria, flexible spiral 262
Gram negative cocci 256
Gram negative rods 260
short curved 262
Gram positive cocci 254
Gram positive rods 256 – 259
Grana inclusions 20
Granulating inflammations 226
Granulation *313*
Granulation tissue *227*
cirrhosis of liver 42, *43*
layers *227*
Granuloma(s)
abscess-forming 228
caseous 228
complicating skin wound healing 312
egg, Schistosomes 280
epithelioid 174, 228
foreign-body 236, *237*
histiocytic 228, 232
histogenesis 228
Listeria *257*
morphology 229
nonreactive, hyperacute tuberculosis sepsis 232
pseudotuberculous 232, *233*
rheumatic 234, *235*
rheumatoid 234, *235*
sarcoidal 230, *231*
Schistosoma *281*
silicosis *41*
tuberculous 232, *233*
typhoid *261*
Granuloma cells 228
Granuloma inguinale 266, *267*
Granulomatosis, Wegener 184, *185*
Granulomatous fungal infection *269*
Granulomatous hypersensitivity reaction 176
Granulomatous inflammations 228 – 237
classification 229
Granulomatous inflammatory reaction, tuberculosis bacteria infection 264
Granulomatous lymphadenitis 229
Graves disease 120
Gray hepatization, lobar pneumonia 210, *211*
Grönblad – Strandberg syndrome 56, *57*
"Ground-glass" hepatocytes, hepatitis B virus infection 8, 248
Group-specific antigen gene 334
Growth factors
hyperfunction 321
proliferation inhibition 321
proliferation inhibitors 296
proliferation stimulators 296
receptors 322
Growth patterns, breast carcinoma 376
Gumma 232
Günther disease 106
Guthrie test 96

H

Hairy heart (fibrinous pericarditis) 206, *207*
Hamartia 300
Hands, trisomy 21, 288
Hapten 156
Hashimoto thyroiditis 186, *187*
mitochondrial autoantibodies 22
Hayfever 168
Healing
across a fracture gap 314, *315*
by first intention 310
fracture 314
under a scab 310
by second intention 310
skin wound 310 – 313
Health, definition 4
Heart *see also* entries beginning cardiac
infarcts *419*
Heart failure, venous thrombosis 408
Heat induced injuries 146
Heat stroke 146
Heavy-chain defect 188
Heavy-chain disorders 190
Helicobacter pylori 262, *263*
Helminthic infection **280 – 285**
Hemagglutinin, influenza virus infection 242
Hemangioma, liver *301*
Hemangiosarcoma *335*
Hemarthrosis 402, *403*
Hematin 106, *107*
Hematogenous infection
fungal 268, *269*
prion diseases 252
pyelonephritis, acute bacterial 214
Hematogenous metastasis 348, *349*
Hematogenous pathogen dissemination 222
fungal infections 268, *269*
Hematogenous pigments 104, 106 – 111
Hematoidin 106, *107*
Hematoma
breakdown, bilirubin levels 108, *109*
epidural 316, *317*
fractures 314, *315*
muscular 402
subdural 316, *317*

Hematoxylin bodies 180
Hematozoidin 106, *107*
  malaria 278
Hemizygous individual, X-linked dominant inheritance 292
Hemochromatosis 72
  melanin 112
Hemodynamic disorders
  thrombosis 404
  venous 422
Hemoglobin breakdown pigments 106
α-Hemolysin, staphylococci infections 254
Hemolysis
  excessive bilirubin production 108
  paraneoplastic syndromes 354
Hemolytic anemia, congenital erythropoietic porphyria 106
Hemolytic jaundice 108
α-Hemolytic streptococci 254
β-Hemolytic streptococci 254
  rheumatic granuloma 234
γ-Hemolytic streptococci 254
Hemolytic-uremic syndrome 260
Hemophilia A 402
Hemorrhage 398–403
  berry aneurysm 398
  hypertensive *399*
  mamillary body *145*
  spontaneous and tumor regression 350
  tumor complication 352
Hemorrhagic cerebral infarction 422, *423*
Hemorrhagic colitis 260
Hemorrhagic diathesis 400–403
Hemorrhagic effusion *353*
Hemorrhagic encephalitis 238
Hemorrhagic halo, demarcation of necrosis 226
Hemorrhagic infarct 414, *415*, 422
  testicular *423*
Hemorrhagic inflammation 216, *217*
Hemorrhagic marginal zone, coagulative necrosis 130
Hemorrhagic necrosis 132
Hemorrhagic pachymeningitis 316
Hemorrhagic pneumonia *217*
Hemorrhoids 392
Hemosiderin 106
Hemosiderosis 72
Henoch–Schoenlein purpura 400, *401*
Hepadenaviridae 248
Heparan sulfate proteoglycans 50
Hepatic amebiasis 276
Hepatic congestion, venous stasis 422
Hepatic siderosis, congenital erythropoietic porphyria 106
Hepatitis
  alcoholic 144
  chronic aggressive 22
Hepatitis A virus (HAV) 240
Hepatitis B virus (HBV) 248, *249*
  tumorigenesis 332, *333*
Hepatocellular carcinoma, hepatitis B virus infection 332, *333*
Hepatocellular jaundice 110
Hepatocytes, hemochromatosis 72, *73*
Hepatocyte toxicity 141
Hepatolenticular degeneration 74
Hepatopathy, shock 396
Hepatosplenic schistosomiasis 280
Hepatosplenomegaly
  mucolipoidoses 66
  mucopolysaccharidoses 66
  sphingomyelin lipidosis 92
Hereditary disorders **286–293**
  mitochondrial 293
  multifactorial 293
Hereditary hemorrhagic telangiectasia 400, *401*
Herniation, cerebral 428, *429*
Herpes simplex virus (HSV) 246, *247*
Herpesviridae 246–248
Herpes zoster 246, *247*
Herpetic balanitis 246
Herpetic encephalitis 246
Herpetic esophagitis 246, *247*
Herpetic gingivostomatitis 246
Herpetic keratoconjunctivitis 246
Heterochromatin 6
  condensation 8
Heterophagy *29*
  lysosomal phase 28
  prelysosomal phase 26
Heterophil agglutination, Epstein–Barr virus infection 248
Heteroplasia 318
High density lipoprotein (HDL) *89*
  hereditary absence in analphalipoproteinemia 86
Histamine 202
Histiocytes
  sea-blue 92
  specialized, rheumatic granuloma 234
Histiocytic granulomas 228, 232
Histoplasma capsulatum 272
Histoplasmosis 272
Histotoxic hypoxia 22, *23*
Histotoxins, clostridial gas gangrene 258
HIV 244, *245*
  budding *245*
  giant cells *11*
HIV infection *see also* AIDS (acquired immunodeficiency syndrome)
  encephalitis 192, *193*
  lymphadenopathy 192, *193*
  pneumopathy associated 192
HLA antigens
  antibacterial protection 164
  function 164
HLA-associated disorders 164
HLA gene classification 164
HLA system, patterns of function *165*
Hodgkin cells 362, *363*
Hodgkin's lymphoma 362
  giant nucleoli in infected cells 10
Holoprosencephaly 302
  trisomy 13, 288
Homeobox genes, proliferation modulation 296
Homocystinuria, type I 98
Homogentisic acid deficiency 96
Horizontal epidermal growth of breast carcinoma 376
Horizontal lymphatic growth of breast carcinoma 376
Hormonal factors, tumor predisposition 336
Hospital-acquired infections 260
HOX 1.5 gene, DiGeorge syndrome, 189
HOX genes
  proliferation inhibition 321
  proliferation modulators 296
Human chorionic gonadotrophin (β-HCG) 326
Human immunodeficiency virus (HIV) *see* HIV; HIV infection
Human leukocyte antigen (HLA) 164, *165*
Human papillomaviruses (HPV) 332
Human T-cell lymphotropic viruses (HTLV) 244
Humoral immune reactions 326
Humoral immunity 156, 160–163
Humoral immunodeficiencies 190
Hunter's syndrome 66
Hurler's syndrome 66, *67*
Hutchinson incisors, congenital syphilis 306
Hutchinson's triad 306
Hyalin, non-collagen forms 46
Hyalin connective tissue 46
Hyaline membrane, shock lung 396, *397*

Hyaline membrane disease, diabetes 80
Hyaline thrombus 406, *407*
Hyaluronate, capsular, *Streptococcus pyogenes* 254
Hyaluronidase, *Streptococcus pyogenes* 254
Hydatid disease 282
Hydatid sand 282
Hydatiform mole, partial *289*
triploidy 288
Hydrocephalic edema 428
Hydronephrosis, prostatic hyperplasia 118
Hydropic swelling, rough endoplasmic reticulum 12
Hydrops 426
Hydrostatic edema 424
Hyperacute rejection 178
Hyperaldosteronism 122
Hyperbilirubinemia 108–111
Hypercalcemia, metabolic disorders 70
Hypercalcemia syndrome 354
metastatic calcification 136
Hypercholesteremia, absorptive steatosis 84
Hyperchromatosis of the nuclear membrane 8
Hypercoagulability, thrombosis 404
Hypercortisolism 122, 354
Hyperdynamic shock syndrome 394, *395*
Hyperglycemic hypoxia 22, *23*
Hyper IgM syndrome 188
Hyperkeratosis 340
Hyperlipoproteinemia disorders 88–91
types I-V 88
Hyperoxaluria, primary 98
Hyperplasia 118–123
adrenal cortex 122
endocrine 118, 120–123
endometrial 118, *119*
follicular, irregular 192
goblet cell *319*
overuse 118
prostatic 118, *119*
thyroid 120
Hyperplastic crypts, small bowel 82, *83*
Hyperregenerative hyperplasia 118
Hypersensitivity pneumonia *see* Extrinsic allergic alveolitis
Hypersensitivity reactions 166–179
cell-mediated *175*
cutaneous basophilic 176
cytotoxic reaction *171*
granulomatous 176
type I 166–169, *167*
type II 170
type III 170–174
type IV 174–177
Hypertension 386–389
arterial 386–389
cardiovascular 388
cerebral 388
endocrine 388
essential 386
hypervolemic 388
neurologic 388
portal 392
pulmonary 390
renal 386–388
renovascular 388
vascular resistance increases 388
Hypertensive arterial disease *389*
Hypertensive cardiac hypertrophy 388
Hypertensive hemorrhage *399*
Hypertensive hydration 424
Hypertensive pulmonary vascular disease 390, *391*
Hypertensive vascular disease 388
Hyperthyroid goiter *121*
Hypertrichosis lanuginosa 354
Hypertrophic bronchial musculature 168
Hypertrophic cardiomyopathy 116, *117*
Hypertrophic pyloric stenosis, congenital 116
Hypertrophy 116
cardiac *117*
endocrine 116
epithelial *313*
Golgi apparatus 16, *17*
hypertensive cardiac 388
Hyperuricemia 102
Hypervolemic hypertension 388
Hypocalcemia, metabolic disorders 70
Hypodynamic shock syndrome 394–396, *395*
Hypogammaglobulinemia, transient 188
Hypoglycemia, transient fetal 80
Hypolipidemia, abetalipoproteinemia 86
Hypolipoproteinemia disorders 86
Hypoplasia 300
Hyposmotic cerebral edema 428
Hypotensive hydration 424
Hypothermia 148
Hypothyroid goiter 120
Hypovitaminosis, alcoholism 144
Hypovolemic shock 394
Hypoxanthine guanine phosphoribosyltransferase defect 102
Hypoxemic hypoxia 22, *23*
Hypoxia 22, *23*
acute generalized 68
acute local 69
chronic 69
diapedesis 398
histotoxic 22, *23*
hyperglycemic 22, *23*
hypoxemic 22, *23*
mitochondrial 22

I
Iatrogenic dissemination, infection 268
Iatrogenic pigments 104
Idiopathic hypertrophic subaortic stenosis 116, *117*
IgA 160
deficiency 188
IgD 160
IgE 160
allergy/hypersensitivity reaction 166–169, *167*
IgG 160
subclass defect 188
IgM 160
IgM-mediated hypersensitivity reactions 170
Ileus, mechanical 206
Immature teratoma 382, *383*
Immediate phase, antigen contact 166
Immune adherence 162
Immune complex aggregation 162
Immune complex diseases *171*
local 174
Immune complex nephritis 172, *173*
systemic lupus erythematosus 180
Immune complex reaction 170–174
Immune complex vasculitis 172
Immune deposit fibrinoid 46
Immune helper cells 162
Immune organs 157
Immune pathology **156–193**
Immune reactions, pathogenic 166–193
Immune regulating antigens 164
Immune response
initial 158, 160–162
secondary 158, 162
Immune surveillance
circumvention 346
defects and tumor development 338
metastasis 346
tumors 326
Immunity
cell-mediated 156, 158, 326
humoral 156, 160–163
tumor 326
Immunocytic lymphoma 364
Immunodeficiency disorders 188
primary 188–190
secondary 190–193
Immunoglobulin inclusions 8

Immunoglobulins *see* Antibodies; specific immunoglobulins
Immunology, tumor 326
Immunosuppression, viral tumorigenesis 332
Impetigo *255*
Implantation phase, hematogenous metastasis 348
Incidence 5
Inclusion bodies
  basophilic cytoplasmic 250
  Donovan 266, *267*
  eosinophilic cytoplasmic 246
  nuclear 8, *9*, 250
Inclusion conjunctivitis 266
Inclusions 8
  mitochondrial 20
  nuclear 8, *9*, 250
  rough endoplasmic reticulum 12, *13*
  smooth endoplasmic reticulum 14, *15*
Incomplete carcinogens 328
Indirect metaplasia 318
Induration 40
Infantile GM_2 gangliosidosis 94, *95*
Infantile gout 102
Infant syphilis 306
Infarct/infarction
  anemic 414
  anemic renal 420
  anemic splenic 418
  border zone 420
  cerebral anemic 420
  classification 420
  hemorrhagic *see* Hemorrhagic infarct
  kidney 420, *421*
  mesenteric 422, *423*
  myocardial 418
  pulmonary 410, *411*
  size 414
  small bowel *415*
  spleen *419*
  subendocardial 418
  total 420
  wedge shaped 418
Infection
  bacterial **254–267**
  helminthic **280–285**
  mycotic **268–273**
  protozoan **274–279**
  viral **238–253**
Infection routes, prion diseases 252
Infectious mononucleosis *see* Epstein–Barr virus (EBV)
Infiltration
  tumor complications 352
  tumor dissemination 344, *345*, *351*
Inflammation
  acute 222
  chronic 222, 224–237
  chronic mucopurulent 224
  chronic nonsuppurative 224
  chronic suppurative 224–227
  definition 194
  granulating 226
  granulomatous 228–237
    classification 229
  HLA-B27 164
  mediators 202, *203*
  perivascular 398
  spread 194
  suppurative 212–215
  symptoms 194, *195*
  wound bed *313*
Inflammatory cells, biological role 200
Inflammatory edema 424
Inflammatory giant cells 10
Inflammatory infiltrate, Hodgkin's lymphoma 362
Inflammatory nucleoli 10
Inflammatory phase wound healing, skin 312
Inflammatory reaction, exudative 196–203
Inflammatory tissue swelling 196
Influenzal pneumonia 216
Influenzal tracheobronchitis 208, *209*
Influenza viruses 242, *243*
Inheritance patterns, single-gene disorders 292
Inherited traits, polygenic 293
Inhomogenous vascular network 344
Inner ear defects 240
Inoculated metastases 348
Insertional mutagenesis 332
Instable insertion, DNA tumor viruses 332
Insulin-dependent diabetes mellitus 78, *79*, 186
Insulitis *79*
Insurance autopsies 5
Integrins, cell contact mechanisms 295
Intercellular communication disruption 321
Interleukins 164, 202
Intermediate filaments 34
  lesions 34
Intermediate thrombi 406, *407*
Interphase nuclei 6
Interstitial cerebral edema 428
Interstitial emphysema 44
Interstitial fibrosis, hypoxia, chronic 69
Interstitial pulmonary fibrosis 40
  sarcoidosis 230
Intestinal amebiasis 276
Intestinal anthrax 258
Intestinal bleeding 402
Intestinal lipodystrophy 82
Intestinal metaplasia 318, *319*
Intestinal mucosa, common variable immunodeficiency 189
Intestinal schistosomiasis 280
Intimal fibroelastosis 56, *57*
Intracellular cohesion, loss and tumor dissemination 344, *345*
Intradermal nevi 366
Intrahepatic block, portal hypertension 392
Intralobular intrahepatic cholestasis 110
Intrauterine development, factors affecting 295
Intrauterine infection
  cytomegalovirus 248
  endocardial fibroelastosis 56
Intravasation, metastasis 346
Intrinsic asthma 168
Invasion, tumor dissemination 344, *345*
Invasion phase, hematogenous metastasis 348
Involutional atrophy 124
Ionization, radiation injury 150
Ionizing radiation 152–155
  tumorigenesis 334
Iron
  deficiency 72
  metabolic disorders 72
  supply deficiency 72
Iron deficiency anemia 402
Iron overload 72
Irreversible stage of shock 394–396
Irreversibly postmitotic cells, internal organ wound healing 314
Ischemia
  absolute persistent 414
    disorders associated 418–421
  absolute temporary 416, *417*
  acute temporary relative 416, *417*
  chronic relative 416
  chronic relative temporary *417*
  mitochondrial 416
  relative 416
Ischemic hypoxia 22, *23*
Ischiopagus 298
Islet amyloidosis *51*, *79*
Isograft 178
Isolated IgA deficiency 188
Isotype switch 166
Ixodes domini, Lyme disease 262

J

Jaundice
  hemolytic 108
  hepatocellular 110
  neonatal 108
  skin discoloration *109*
JC virus type, miopapovaviridae 250
Jones–Mote reaction 176

Junctional nevi 366, *367*
Juvenile-onset diabetes mellitus 78, *79*, 186

K
Kala-azar 274
Kallikrein 202
Kaposi sarcoma 192, *193*
κ chain defect 188
Karyogram 6
Karyolysis 8
Kayser – Fleischer ring, Wilson's disease 74, *75*
Keloid 312
Keratin 34
Keratoconjunctivitis, herpetic 246
Keratoconjunctivitis sicca syndrome 184
Keratosis, actinic 150, *151*
Ketone bodies 84
Ketonemia 84
Ketonuria, branched chain 98
Kidney *see also* entries beginning renal
  abscess 212
  amyloidosis *53*
  calcifications, hypercalcemia 70
  cystic *301*
  fatty degeneration 69
  hyperoxaluria, primary *99*
  infarct *421*
  shock 396, *397*
Kidney disease, adult polycystic 292
Kidney failure, acute, shock kidney 396
Kinin system 202
Kinky-hair disease *see* Trichopoliodystrophy
"Kissing disease" *see* Epstein – Barr virus (EBV)
Klebsiella 260
Klinefelter syndrome 290, *291*
"Knapsack" tumor 350, *351*
Koplik spots, measles virus infection 242
Krabbe disease 92, *93*
Kuru 252
Kuru plaques 252
Kussmaul's disease (polyarteritis nodosa) 58, *59*, 172

L
Labial herpes *247*
Labile tissue, tissue repair 309
Laceration, central nervous system 316
Lactose intolerance 78
Lacunar cells, Hodgkin's lymphoma 362, *363*
Laminated thrombus 406
Langerhans cells, contact allergy 176, *177*
Lannec's cirrhosis 42, *43*
Lardaceous spleen type amyloidosis 52, *53*
Large cell carcinoma, bronchogenic 378
Laryngeal edema *205*
Laryngeal papillomatosis *333*
Laryngotracheitis, diphtheric 208
Laser radiation 150
Latency 328
Latent infection, RNA tumor viruses 334
Latent tumor cells, metastasis 346
Late phase antigen contact 166
Late phase wound healing, skin 312
Lateral wall infarcts 418
Late recurrence 350
LCAT deficiency, familial 88
Lead nephropathy 142
Lead poisoning 142
  plumbism 104
Lecithin cholesterol acyltransferase (LCAT) deficiency 88
Lectins 32
Left heart insufficiency, cardiac edema 424
Leiomyomas 356, *357*
Leiomyosarcoma 356, *357*
Leishmania 274
Leishmania donovani *275*
Leishmaniasis 274, *275*
Lens dislocation, Marfan syndrome 48
Lentigo maligna melanomas 366, *367*
Leprosy 264, *265*
Leptin, obesity 84
Lesch – Nyhan syndrome 102
Lethal cell injury **128 – 133**
Lethality 5
Leukemia 358 – 361
  acute lymphoblastic 360
  acute myelogenous 360
  chronic lymphoblastic 360, *361*
  chronic lymphocytic 364
  chronic myelogenous 360, *361*
  leukemic 358
Leukemic neoplastic granulopoiesis 358
Leukocyte adhesion 200, *201*
Leukocyte extravasation 196
Leukocyte margination 200, *201*
Leukocyte proliferation, paraneoplastic syndromes 354
Leukocyte transmigration 200, *201*
Leukocytoclasis 170
Leukocytoclastic vasculitis *173*, 400
  serum disease 172
Leukoencephalitis 238
Leukoplakia 340, *341*
Leukotrienes 202
Lewy bodies 114
  microfilament lesions 34, *35*
Libman – Sacks endocarditis 180, *181*
Life expectancy, average 5
Li-Fraumeni cancer syndrome 336
Light-chain amyloid 50
Limbic encephalopathy 354
Lines of Zahn 406
Lipid plaque, atherosclerosis 90
Lipids, metabolic disorders 82 – 95
Lipid vacuoles, anemic cerebral infarction 420
Lipochrome pigments 114
Lipofuscin 28, *29*, 114, *115*
Lipogenic pigments 114
Lipoma 356
Lipoprotein transport route 90
Liposarcoma 356, *357*
Lipoteichoic acid, Streptococci pyogenes 254
Liquefactive necrosis 132, *133*
  open brain injuries 316
Listeria granuloma *257*
Listerial fetopathy 306
Listeria monocytogenes 256
Listeriosis, liver *307*
Lithopedion 136
Live births, chromosome aberrations 287
Liver
  abscess 212
  amebiasis 276
  amyloidosis *53*
  cirrhosis *see* Cirrhosis of liver
  copper storage *75*
  diabetic 80
  echinococcosis 282, *283*
  fatty *see* Fatty liver
  fibrosis 141
  hemangioma *301*
  hemochromatosis *73*
  nutmeg 422, *423*
  shock *397*
Liver cells, apoptotic *129*
Liver damage, hemosiderosis 72
Liver disease, drug-induced 141
Liver fluke *335*
Liver pattern hematogenous metastasis 348
Liver toxins
  predictable 141
  unpredictable 141
Livores 5
Lobar pneumonia 210, *211*
Lobosea 276
Lobular carcinoma of the breast 376, *377*
Local anaphylaxis 168
Local hypothermia 148
Local immune complex disease 174
Local inflammation 194
Localized amyloidosis 52

Lockjaw 258
Loss of cohesion, metastasis 346
Louis – Bar syndrome *see* Ataxia telangiectasia
Low density lipoprotein (LDL) *89*
  receptor deficiency 88
Low lymphocyte type Hodgkin's lymphoma 362
Lucey – Driscoll syndrome 110
Lugol's solution, amyloid detection 48
Lung *see also* entries beginning pulmonary
  congestion *41,* 210
  damage, α_1-antitrypsin deficiency 44
  Echinococcosis 282
  fibrinolysis *403*
  hemorrhagic infarct *415*
  lobar pneumonia 210, *211*
  microthrombi *403*
  shock 396, *397*
Lung disease, drug-induced 141
Lung pattern hematogenous metastasis 348
Lupus arteritis, systemic lupus erythematosus 180
Lupus endocarditis *181*
Lupus erythematosus, systemic (SLE) 180
Lupus vasculitis *173*
  serum disease 172
Lyell syndrome 140
Lyme disease 262, *263*
Lymphadenitis
  granulomatous 229
  toxoplasmic *277*
Lymphadenopathy
  common variable immunodeficiency 189
  HIV infection 192, *193*
Lymphangiectasia 426, *427*
Lymphangiosarcoma 426
Lymphangitis
  blastomatous 346
  recurring 426
  sarcomatous 346
  tumorous 346
Lymphangitis carcinomatosa 346, *347,* 426
Lymphatic leukemia 358
Lymphatic metastasis 346
Lymph drainage, impaired intestinal 82
Lymphedema 426
Lymph load 426
Lymph nodes 157
  metastases 346, *347*
Lymphoblasts, acute lymphoblastic leukemia 360
Lymphocyte predominance type Hodgkin's lymphoma 362
Lymphocytes 200 *see also* B cell (lymphocyte); T cell (lymphocyte)
Lymphocyte skin infiltrate, contact allergy 176
Lymphocytic alveolitis, sarcoidosis 230
Lymphocytic inflammation 220
Lymphocytic thyroiditis *see* Hashimoto thyroiditis
Lymphogranuloma venereum 266
Lymphokines 164
Lymphoma 362 – 365
  acute lymphoblastic 360
  B-cell 342
  diffuse large B-cell 364
  follicle center 364, *365*
  Hodgkin's *see* Hodgkin's lymphoma
  immunocytic 364
  malignant 362 – 365
  MALT 158
  non-Hodgkin's 364
Lymphostasis *427*
Lymph vessel scarring 426
Lyon's hypothesis, x-linked inheritance 292
Lysis
  of elastin 54
  of proteoglycan 60, 66
Lysosomal disorders 30
Lysosomal enzyme deficiency 30, *31*
Lysosomal lesions 26 – 31
Lysosomal lipid pigments 28
Lysosomal phase 28
Lysosomal storage disease 30, *31*

M

Macroangiopathy, diabetic 80
Macroglobulinemia, Waldenström 190, 364
Macroglossia, AL amyloidosis 52
Macronodular cirrhosis 42, *43*
Macrophages 200
  granulomatous inflammation 228
Macroscopic coagulopathy, paraneoplastic syndromes 354
Mad cow disease 252
Magnesium ammonium phosphate urinary calculi 138
Major histocompatibility complex (MHC) 164
Malabsorption 82, 86
Malabsorption syndromes 82
Malacia 132
Malaria 278
Malaria falciparum *279*
Maldigestion 82
Malformation(s)
  congenital **294 – 307**
  definition 294
  embryopathies 300
  fusion 300
  multifactorial 304
  multiple 302
  supernumerary 300
Malignant lymphogranulomatosis *see* Hodgkin's lymphoma
Malignant melanoma *see* Melanoma, malignant
Malignant tumors 320 *see also* specific tumors
  characteristics 350
  DNA content 342
  epithelial 372
  nonepithelial 355
  non-metastasizing 384
Mallory bodies *35*
  alcoholic hepatitis 144, *145*
  intermediate filament lesions 34
Mallory – Weiss syndrome 398
MALT 157
  lymphomas 158
Mamillary body
  hemorrhage *145*
  siderosis *145*
Maple syrup urine disease 98
Marfan syndrome 48
Mask of pregnancy 114, *115*
Massive malacia 420
Mast cells 200
Matrix inclusions 20, *21*
Matrix vesicles *135*
  degenerative calcification 134
Mature connective tissue zone, granulating inflammations 226
Mature teratoma 382, *383*
Measles croup 242
Measles enanthema 242
Measles encephalitis, acute perivenous 242
Measles exanthema 242
Measles giant-cell pneumonia 242, *243*
Measles virus 242, *243*
Mechanical ileus 206
Meckel's diverticulum, apoptosis 296, *297*
Meconium ileus, cystic fibrosis 64
Mediator substances, immune response 158
Medullary carcinoma, breast 376
Medullary infarcts 420
Medulloblastoma 382
Megaloblastic anemia
  alcoholism 144
  autoimmune gastritis 186
Megamitochondria 18
Meigs syndrome 426
Melanin, cutaneous 112 – 114
Melanocytic tumors 366
Melanogenesis 112, *113*
Melanoma, malignant *113,* 366
  asbestosis 142
  lentigo maligna 366, *367*

nodular 366, *367*
superficial spreading 366, *367*
Melasma 114, *115*
Membrane
loss, mitochondrial cristae 20
proliferation, mitochondrial cristae 20, *21*
synthesis, abetalipoproteinemia 86
Membranous cells (M cells) 157
Meningioma 368, *369*
Meningitis
acute bacterial 214
aseptic, poliomyelitis 238
early 316
Neisseria meningitidis 256
suppurative metastatic *215*
Meningoencephalitis of early summer 240
Meniscus
fatty degeneration 69
rupture 60
Menkes' syndrome 54, 74
Merozoites, malaria 278
Merseburg triad, Graves disease 120
Mesenchymal component, asbestosis 142
Mesenchymal damage, primary α_1-antitrypsin deficiency 44
Mesenchymal metaplasia 318
Mesenchymal tumors 355
Mesenteric arteriosclerosis 416
Mesenteric infarction 422, *423*
Mesothelioma, pleural *143*
Mesothelioma cells *3*
Mesothelioma component, asbestosis 142
Metabolic cirrhosis 42
Metabolic disease, HLA-A3 164
Metabolic disorders
inorganic compounds **68 – 75**
organic compounds **76 – 103**
Metachromasia 94
Metachromatic leukodystrophy 94, *95*
Metalloproteinase inhibitors 346
Metaphyseal lead lines 142
Metaplasia 318
Metastases 328, 346 – 350
canalicular 348
cavitary 348
colorectal carcinoma 380
hematogenous 348, *349*
inoculated 348
loss of gene inhibition 346
lymphatic 346
lymph-node 346, *347*
prostatic carcinoma 374
remote 346
tumor dissemination 344
Metastasis inhibition gene defects 338
Metastatic calcification 136
Metastatic inflammation 194
Methods, pathology 2
Methylmalonic aciduria 86
Metrorrhagia *403*
Microangiopathy, diabetic 80
Microcirculation, changes in inflammation 196, *197*
Microdeletion syndromes 288 – 290
Microembolism, pulmonary *391*
Microfibrils 36
lesions 48 – 53
Microfilament lesions 34
Microfilament retraction 34, *35*
Microgyria 24, *25*
Microinfarcts 420
Micronodular cirrhosis 42, *43*
Microthrombotic congestion, shock kidney 396
Microtubular lesions 34
Microtubules 34
Microwaves and infrared radiation, injury 150
Migration, tumor dissemination 344
Migration homing device 296
Migration map 296
Migration motor 296
Migration starting signal 296
Migratory phase wound healing, skin 312
Miliary tuberculosis *233, 265*
Milroy disease 426
Miopapovaviridae 250
Mitochondria
autoantibodies 22
depletion 18
division *19*
genome 293
hypoxia, acute generalized 68
lesions 18 – 21
swelling 18, *19,* 416
Mitochondria-layer complexes 12
Mitochondrial cristae
changes 20
loss *21*
proliferation *21*
Mitochondrial diabetes mellitus 293
Mitochondrial disorders 22 – 23
hereditary 293
Mitochondrial DNA
mutations 20, 293
structural change 20
Mitochondrial myopathies 22
Mitochondrial regulators of apoptosis 322
Mitotic dysfunction 10
Mitotic figures, abnormal 154
Mitotic nuclei 6
Mitral valve insufficiency 418
Mitral valve prolapse syndrome 60, *61*
Mixed cellularity type Hodgkin's lymphoma 362, *363*
Mixed function oxidase (MFO) system 330
Mixed mesodermal tumor 382
Mixed thrombus 406
Molds 272
Molecular DNA aging 124
Molecular mimicry, Candida albicans 270
Molluscum contagiosum virus 246, *247*
Mönckeberg arteriosclerosis 134, *135*
Moniliasis (Candida albicans) 270, *271*
Monocephalus diprosopus 298
Monoclonal gammopathy 190
Monocytopoiesis elements, acute myelogenous leukemia 360
Mononuclear cytomegalic giant cells, cytomegalovirus infection 248
Morbidity 5
Mortality 5
M protein, Streptococcus pyogenes 254
Mucinous adenocarcinomas, colorectal carcinoma 380
Mucinous carcinoma *3,* 372
breast 376
colorectal 380, *381*
Mucin-secreting carcinoma 372
Mucoid degeneration *61*
dissecting aneurysm 62
proteoglycan complexing disorders 60 – 63
Mucoid meniscus pathology 60
Mucolipidoses 66
type 4, *31, 67*
Mucopolysaccharide metabolite storage 66
Mucopolysaccharides 60 *see also* Proteoglycan
Mucopolysaccharidoses 66
type I 66, *67*
Mucopurulent inflammation 212, *213*
Mucor 272
Mucosa associated lymphoid tissue *see* MALT
Mucosal mycoses 268
Mucosal papilloma 370
Mucous membrane edema, asthma 168
Mucoviscidosis *see* Cystic fibrosis
Mucus accumulation
bronchi *65*
colon crypt *65*
goblet cell *65*
pancreas *65*

Mucus production, excessive, asthma 168
Mulberry cells 94
Multifactorial hereditary disorders 293
Multifactorial malformations 304
Multifocal basal cell carcinoma 384
Multiple endocrine neoplasia, type I 120
Multiple malformations 302
Multiple myeloma 364, *365*
Multiple sclerosis 186
Mumps virus 242
Mural thrombus *409*
Muscle atrophy *125*
Muscle calcification 136, *137*
Muscle tumors 356
Muscular hematomas 402
Muscular pulmonary arteries, pulmonary hypertension 390
Mutagenesis, insertional 332
Mutations 286
  mitochondrial DNA 20
Myasthenia gravis 186, 354
Mycobacteria 264
Mycobacterium africanum 264
Mycobacterium bovis 264
Mycobacterium leprae 264, *265*
Mycobacterium tuberculosis 264, *265*
Mycoid parasites 278
Mycoplasma pneumoniae 266, *267*
Mycotic infection **268 – 273**
Mycotic vasculitis *273*
Myelin degeneration, mucolipoidoses 66
Myeloblasts, acute myelogenous leukemia 360
Myelofibrosis, primary 358
Myelogenous leukemia 358
Myeloma nephropathy 364, *365*
Myelopoiesis elements, chronic myelogenous leukemia 360
Myocardial aneurysm 418
Myocardial calcinosis 136, *137*
Myocardial fibrosis, toxic 72
Myocardial hypertrophy *117*
Myocardial infarction 418
Myocardial lesions, cardiac thrombosis 408
Myocardium, fatty degeneration 69
Myocutaneous candidiasis, chronic 189
Myocyte weaving, acute myocardial infarction 418
Myolysis, electrical injuries 150
Myopathies, mitochondrial 22, 293
Myosin, hypertrophic cardiomyopathy 116
Myositis, focal *255*
Myositis ossificans 134
Myxoid liposarcoma 356

N

Nasal glioma *319*
Necrosis 130
  central caseous, tuberculous granuloma 232
  coagulative 130, *131*
  demarcation 226, *227*
  focal cytoplasmic 130, *131*
  hemorrhagic 132
  liquefactive 132, *133*
  mutilating acral 264
  perivascular 398
  structured 130
  tumor 352, *353*
  tumor regression 350
  unstructured 130
Necrotic calcification 136
Necrotic fibrinoid 46, *47*
Necrotizing fasciitis 218, *219*
Necrotizing inflammation 218 – 220
  nonreactive 220
Negative selection, T lymphocytes 158
Negri bodies, rabies virus infection 244
Neisseriaceae 256
Neisseria gonorrhea 256
Neisseria meningitidis 256
  meningitis, acute bacterial 214
Nematodes 284
Neonatal jaundice 108
Neonatal tetany, DiGeorge syndrome 189
Neoplasia *see* Tumor
Neoplastic immunocytes *191*
Neoplastic megakaryocytes 358
Nephritis, immune complex 172
  systemic lupus erythematosus 180
Nephroblastoma *325*
Nephropathy
  chronic urate 102
  cystinosis 100
  gouty 102
  lead 142
  myeloma 364, *365*
Nephrotic syndrome, AA amyloidosis 52
Nerve cell injury, toxic 141
Nerve sheath tumors 368
Neuraminidase, influenza virus infection 242
Neuroblastoma 382, *383*
Neurofibroma *325*, 368
Neurofibromatosis *325*
  gene 324
Neurofibromin 324
Neurofilaments 34
Neurogenic shock 394
Neurological disorders, drug-induced 141
Neurologic hypertension 388
Neuroma 368, *369*
  scar 316, *317*
Neuromelanin 114
Neuronal intestinal dysplasia 296
Neuronophagy, poliomyelitis 238
Neuropathy, diabetic 80
Neutrophil proteases 202
Neutrophils 200
Nevocellular nevus 366
Newborn
  inflammation 220
  jaundice 108
  Pneumocystis carinii pneumonia 278, *279*
Nezelof syndrome 189
NF-1 gene 324
  mutation, café au lait macules 324, *325*
NF-2 gene 324
  allele defect, acoustic neurinoma 324
Niemann – Pick disease 92
Nipple, Paget's disease *377*
Nitrosamines, tumors 336
Nodal non-Hodgkin's lymphomas 364
Nodal vascular sinus transformation 426
Nodular goiter 120, *121*
Nodular hyperplasia, prostatic 118, *119*
Nodular melanomas 366, *367*
Nodular sclerosis type Hodgkin's lymphoma 362, *363*
Nodular subtype Hodgkin's lymphoma 362
Nodular ulcerous basal cell carcinoma 384
Noncrystalline foreign-bodies, granulomas 236
Noncytocidal infection, RNA tumor viruses 334
Nondisjunction
  trisomy 18, 288
  trisomy 21, 288
Nonepithelial tumours 355 – 369
Non-genotoxic carcinogens 328
Non-Hodgkin's lymphoma 364
Noninflammatory edema 424
Non-insulin dependent diabetes mellitus 78, *79*
Non-melanin pigments 114
Non-metastasizing malignant tumors 320, 384
Nontropical sprue 82, *83*
Non-tumor angiogenic factors 344
Nose, saddle 306
NO-synthase defect 116
Nuclear aneuploidy 8, *9*
Nuclear changes, tumorigenesis 342

Nuclear chromatin condensation, apoptosis 132
Nuclear diploidy *9*
Nuclear euploidy 8
Nuclear inclusion bodies, papovaviridae infection 250
Nuclear lesions 6–11
Nuclear membrane, hyperchromatosis 8
Nuclear molding, small cell bronchogenic carcinoma 378
Nuclear polyploidy 8, *9*
Nuclear regulation factors 322
Nuclear war/testing 154
Nuclei
changes in number 10
forms of 6
secondary 14
size 8
Nucleolar change 10
Nucleotides, metabolic disorders 102
Nutmeg liver *423*
hepatic congestion 422
Nutrition
colorectal carcinoma predisposition 380
fats 336
tumor risk factors 336
Nysten's law 5

O

Obesity 84
Obligatory intracellular bacteria 266
Obliteration, vessel 408
Obliterative lymphatic disease 426
Obstructive emphysema 44
Obstructive pulmonary hypertension 390
Obstructive vascular fibrosis, scleroderma 182
Occlusive thrombus, atherosclerosis 90
Occupational hazards, bronchogenic carcinoma 378
Occupational toxin pigments 104
Ochronosis 96, *97*
Ocular albinism 96
Oculocutaneous albinism 96
Oculoscoliotic Ehlers-Danlos syndrome 38
Official autopsies 5
Oligemia 416
Oligodendroglioma 368
Oligohydramnios sequence (Potter sequence) 302, *303*
Oligophrenia, phenylketonuria 96
Oncocytes 18, *19*
Oncocytic cytoplasm transformation 18
Oncocytoma 18, *19*
Oncofetal antigens 326
Oncofetal lesion 12
Oncogene activation 338
breast carcinoma 376
colorectal carcinoma 380
prostatic carcinoma 374
Oncogenes, viral 332
Oncornaviruses 244, 334
Oncosis 130
Oncospheres, Taenia saginata 280
Oncotic edema 426
Onion skin arteriopathy
lupus vasculitis 172
systemic lupus erythematosus 180, *181*
Ontogeny 295
Onychomycosis 268, *269*
Oocyst, Toxoplasma gondii 276
Orchitis, mumps virus infection 242, *243*
Organ atrophy 126
hypoxia, chronic 69
Organ function disruption, tumor complications 352
Organized embolism *411*
Organized thrombus *409*
Organ mycoses 268
Organs, wound healing 314
Oriental liver fluke 334
Orthomyxoviridae 242
Osler–Weber–Rendu disease 400, *401*
Osmotic edema 424
Osseous multiple myeloma 364
Osteochondritis, syphilitic 306, *307*
Osteogenesis imperfecta 38, *39*
Osteoma 358, *359*
Osteomalacia 82
cancellous bone *83*
Osteomyelitis, posttraumatic 314
Osteopathy, cystinosis 100
Osteopenia, hypercalcemia 70
Osteoporosis 126
Osteosarcoma 358, *359*
Ovarian dermoid cysts 382, *383*
Overuse hyperplasia 118
Owl's eye cells, cytomegalovirus infection 248, *249*
Oxalate crystals *99*
Oxalosis 98
Oxidative damage, secondary α_1-antitrypsin deficiency 44
Oxidative energy production *23*
Oxygen, role in metabolic disorders 68–69
Oxyuriasis 284, *285*

P

p53 tumor suppressor gene 324, *325*
apoptosis 128
Paget's disease of nipple *377*
Paired helical filaments, microfilament lesions 34
Pallidum necrosis, symmetrical 68
Panacinar emphysema 44, *45*
Pancoast tumor 378
Pancreas
cystic fibrosis 64
hemochromatosis *73*
rusty *73*
Pancreatic cirrhosis, hemochromatosis 72
Pancreatic stones, hypercalcemia 70
Pancreatitis, acute 216, *217*
lipolytic fat necrosis 132
Pancreatopathy, shock 396
Pancytopenia, copper deficiency, chronic 74
Panencephalitis 238
subacute sclerosing 242
Pannus, rheumatoid granuloma 234
Papillary carcinoma 372, *373*
breast 376
urothelial 372
Papilloma 370, *371*
basal cell 370
glandular excretory duct 370
mucosal 370
squamous cell *371*
urothelial 370
Papovaviridae 250
Paradoxical embolisms 410
Parainfluenza viruses 242
Parakeratosis 340
contact allergy 176
Paralysis, flaccid, poliomyelitis 238
Paramyloidoses 52
Paramyxoviridae 242
Paraneoplastic acrokeratosis 354
Paraneoplastic syndromes 354
Paraplasmic inclusions 8
Paraseptal emphysema 44
Parasite embolism 412
Parathormone ineffectiveness, hypocalcemia 70
Parathyroid goiter 120
Parietal endocardial thrombosis 418
Parkinson disease, neuromelanin synthesis 114
Particulate inclusions 12
Particulate radiation 152
Parvoviridae 250
Parvovirus B19 250
Patau syndrome (trisomy 13), 288, *289*
Pathogenesis of disease 4
Pathogen toxins, hematogenous pathogen dissemination 222
Pathology
cellular **6–35**
definition 2

Pathology
fundamentals **2–5**
of inflammation **194–237**
Patients, prominent
Akhenaton, Pharoah 282
Alexander The Great, of Macedonia 266
Ali, M. 114
Amenophis IV, Pharoah 282
atomic bomb victims 154
Bachmann, I. 146
Beethoven, L. von 42, 138
Bellini, V. 276
Bochert, W. 248
Buchenwald, prisoners of 146
Bunker, C 298
Bunker, E. 298
Chagall, M. 168
Chopin, F. 232
Clay, C. 114
Debussy, C. 380
Dürer, A. 276
Dürrenmatt, F. 78
Dvorak, A. 420
Eisenhower, D.D. 230
Ford, B. 376
Frederick II of Prussia 102
Freud, S. 372
Friedrich, D. 420
Gaugin, P. 262
Havel, V. 378
Heinrich IV, Emporor 276
Hemingway, E. 140
Hitler, A. 114
Jesus, of Nazareth 396
Jews, in Nazi Germany 148
Kafka, F. 232, 398
Kennedy, J.F. 112, 276
Kirchner, E.L. 232
Klee, P. 182
Lenin, I.V. 398
Lenin, V.I. 386
Lincoln, A. 48
Liszt, F. von 210
Ludwig, P. 214
Mahler, G. 222
Matisse, H. 218, 224
Mendelssohn, F. 398
Mitterand, F. 374
napalm bomb victims 146
Nietzsche, F. 262
Nobel, A. 418
nuclear testing/waste accident victims 154
Paganini, N. 48
Pahlavi, M.R. Shah 364
Pol Pot 218
prisoners in Republic of China 178
Puccini, G. 224
Ravel, M. 124
Reagan, R. 124, 380, 384
Renoir, A. 234
Roosevelt, D. 238, 386
Scheel, M. 376
Schönberg, A. 168
Semmelweis, I.P. 262
Shah of Iran 364
Siamese twins 298
Smetana, B. 210, 262
Spitz, M.A. 168
Tchaikovsky, P.I. 262
Victoria, Queen of Britain 402
von Beethoven, L. 42, 138
von Liszt, F. 210
von Weber, C.M. 232
Wagner, R. 418
Wilms, M. 208
Patterns of inheritance
autosomal dominant single-gene disorders 292
autosomal recessive single-gene disorders 292
X-linked recessive single-gene disorders 293
Paul-Bunnel test, Epstein–Barr virus 248
Pea-soup stools, typhoid fever 260
Pellagra 98
Peptic ulcers 218, *219*
hypercalcemia 70
Perfusion, tumor 344–350
Periarteritis nodosa (polyarteritis nodosa) 58, *59,* 172
Peribronchial ectatic emphysema, cystic fibrosis 64
Pericardial sarcoma *349*
Pericarditis, fibrinous 206, *207*
Pericarditis epistenocardia 418
Pericecal abscess 212
Perifocal cerebral edema 316
Period and comma phenomenon 274
Periodic acid-Schiff reaction, dermatophytes 268
Peripheral aneurysm 62
Peripheral bronchogenic carcinoma 378, *379*
Peripheral edema *425*
Peripheral nerves, wound healing 316
Peripheral pulmonary embolisms 410
Peritoneal cancer *349*
Peritonitis, reactive fibrinous 422
Perivascular inflammation 398
Perivascular necrosis 398
Perivascular neoplasms 398
Perivenous necrosis, hypoxia, acute generalized 68
Permanent regeneration 309
Permanent tissue, tissue repair 309
Permeability *199*
delayed persistent type 198
immediate persistent type 198
immediate transient type 198
Permeability microcirculation, inflammation 198
Peroral infection, prion diseases 252
Peroxide, breakdown 24
Peroxisomal diseases 24
Peroxisomal lesions 24–25
Peroxisome function 24
Petechial exanthema 266
Petrophaga lorioti, gallstones 138, *139*
Phagocytosis 26, *27*
Phenylalanine hydroxylase defect, phenylketonuria 96
Phenylketonuria (phenylpyruvic oligophrenia) 96
melanin synthesis 112
Pheochromocytoma 388, *389*
Philadelphia chromosome 342, *343*
Phlebolith 136
Phocomelia *303*
Phosphodiesterase 32
Photodermatosis, light radiation 150
Physical cell injury **146–155**
Physical tumorigenesis 334
Physiologic regeneration 309
Phytanic acid storage disease 86
Pick cells, sphingomyelin lipidosis 92
Pick disease 126
Pickwickian syndrome 84
Picornaviridae 238–240
Pigeon breeder's lung *175*
Pigment cirrhosis 72, *73*
Pigment lesions **104–115**
Pigments
endogenous 104, 106–115
exogenous 104
Pilocytic astrocytoma *3,* 368, *369*
Pin worm 284
Pituitary, shock *397*
Placentitis, rubella 240
Plague 216, *217*
Planar xanthoma 90
Plasma cells 200
deficiency, common variable immunodeficiency 189
Plasma cell siderosis 72
Plasma-derived mediators of inflammation 202
Plasmocytic inflammation 220
Plasmocytoma 190
Plasmodia 278
Plasmodium falciparum 278, *279*
Platelet activating factor (PAF) 202
Platelet thrombi 406, *407*
Pleural empyema *213*
Pleural mesothelioma *143*
Pleural plaques *47*
asbestosis 142
Pleural sarcoma *349*
Pleuritis, fibrinous 206, *207*
Plumbism 104
Pluriglandular insufficiency, toxic, hemochromatosis 72
Pneumoconiosis, asbestosis 142

Pneumocystis carinii 278, *279*
Pneumonia
  aspergillus 272, *273*
  atypical 266
  candidal 270
  cystic fibrosis 64
  hemorrhagic *217*
  influenzal 216
  invasive necrotizing aspergillus 272
  lobar 210, *211*
  measles giant-cell 242, *243*
  Pneumocystis carinii 278, *279*
  syphilis 306
pNM23 346
  colorectal carcinoma 380
Podagra 102, *103*
Polarized light
  amyloid 48
  foreign-body granuloma 236, *237*
Polioencephalitis 238
Poliomyelitis *239*
  acute anterior 238
Poliomyelitis virus 238
Polyarteritis nodosa 58, *59*, 172
  serum disease 172
Polydactyly, trisomy 13, 288, *289*
Polygenic inherited traits 293
Polymerase gene, RNA tumor viruses 334
Polymerization block 34
Polymyositis 182, *183*
Polyneuropathy, lead poisoning 142
Polynuclear cells 10
Polyp 370
Polyploidy, nuclear 8, *9*
Polypoid exophytic carcinoma, colorectal 380
Polyposis, colorectal *381*
Pompe disease (glycogenosis type II) 76, *77*
Popcorn cells, Hodgkin's lymphoma 362
Popliteal artery degeneration 60, *61*
Porcelain bladder *47*
Pork tapeworm (Taenia solium) 282, *283*
Porphyria 106, *107*
  acquired 142
Portal edema 424
Portal hypertension 392
Portal vein pattern, hematogenous metastasis 348
Portosystemic shunts 392
Positive selection, T lymphocytes 158
Posterior fusion failure 300
Posterior inferior cerebellar artery syndrome 420
Posterior wall infarcts 418
Posthepatic block, portal hypertension 392
Posthepatitic cirrhosis 42
Post-lysosomal phase 28
Postmortem examination 5
Postmortem rigidity 5
Postnecrotic cirrhosis 42, *43*
Poststreptococcal glomerulonephritis 172
Post-thrombotic syndrome 408
Potter sequence 302, *303*
Poxviridae 246
Precancerous conditions 340
Precancerous disorders 340
  colorectal carcinoma predisposition 380
Precancerous lesion 340, 380
Precipitation fibrinoid 46
Precocious puberty, adrenogenital syndrome *123*
Precursors to tumorigenesis 340
Predisposition, tumor 336, 380
Prelysosomal phase 26
Prenatal toxoplasmosis 276
Prevalence 5
Primary amyloidosis 52
Primary biliary cirrhosis 22
Primary platelet thrombus 406
Primary union
  fracture healing 314
  wound healing 310
Prion diseases 252
Prion protein 252
Proglottid
  Echinococcus granulosus 282
  Taenia saginata 280, *281*
Programmed destruction of adjacent cells 128
Programmed self-destruction 128
Progression of carcinogenesis 328
Progressive systemic sclerosis 182, *183*
Proliferation
  compartment, tissue repair 308
  factors and regulation of tissue repair 309
  inhibition 321–325
  inhibitors 296
    regulation tissue repair 309
  membrane 20
  mitochondrial 18
  modulators 296
  smooth endoplasmic reticulum 14, *15*
  stimulators 295–296
Proliferative phase wound healing, skin 312
Proliferative productive reaction, tuberculosis bacteria infection 264
Prominent patients *see* Patients, prominent
Promotion of carcinogenesis 328
Propionic acidemia 86
Proscolices, Echinococcus granulosus 282
Prostaglandins 202
Prostate-specific antigen (PSA) 326, *327*
Prostatic carcinoma 374
Prostatic hyperplasia 118, *119*
Prostatic intraepithelial neoplasia (PIN) 374, *375*
Prostatitis, reactive 118
Protease excess, secondary α_1-antitrypsin deficiency 44
Proteinase inhibitors 346
Proteins
  deficiencies, serum 96
  metabolic disorders 96–101
Proteoglycan 36
  biosynthesis 60
  complexing disorders 60–63
  lesions 60–67
  lysis 60
  lysis deficiencies 66
  secretion disorders 64
  visualization 60
Proteolysis 174
Proto-oncogene (C-onc genes) 295, 322, *323*
  growth factors 322
Protozoan infection **274–279**
"Proud flesh," 312
Proximal intimal entry tear 62
Proximate carcinogen 330
Psammoma bodies 118
Psammomatous bodies, necrotic calcification 136
Psammomatous calcification 350
Psammomatous meningioma 368
Pseudoarthrosis 314
Pseudogout 102
Pseudo-lupus erythematosus 22
Pseudomembranous colitis 208, *209*
Pseudomembranous croupous form, fibrinous mucosal inflammation 208
Pseudomembranous necrotizing form, fibrinous mucosal inflammation 208
Pseudorosette, gliomas 366
Pseudosarcoma 154
Pseudotuberculous granuloma 232, *233*
Pseudoxanthoma elasticum 56, *57*
Pulmonary abscess 212
Pulmonary anthrax 258
Pulmonary arteries, pulmonary hypertension 390
Pulmonary arteriosclerosis 390, *391*
Pulmonary calcinosis 136, *137*
Pulmonary ectasia, Marfan syndrome 48

Pulmonary edema, alveolar *425*
Pulmonary embolism 410, *411*
Pulmonary fibrosis 40, *41*, *391*
Pulmonary hypertension 390
Pulmonary hypoplasia, restrictive dermopathy 54
Pulmonary infarction 410, *411*
Pulmonary microembolism *391*
Punctate amastigotes, Trypanosoma cruzi 274
Puriform thrombolysis 408
Purpura cerebri, heat stroke 146
Purpura fulminans 398
Purulent inflammation 212
Purulent meningitis 214
Pus 212
Pyelonephritis, acute bacterial 214, *215*
Pygopagus 298
Pyloric stenosis, congenital 116

Q

Quiescent tissue, tissue repair 309
Quincke edema 426, *427*

R

Rabies virus 244, *245*
Radiation fibroblasts *155*
Radiation-induced lesions/conditions
  agranulocytosis 154
  anemia 154
  bone necrosis *155*
  capillary necrosis 152
  cutaneous edema and ulcer 154
  dermatitis 154, *155*
  embryopathy 302
  enteritis 154
  fibrosis of testis *155*
  intimal lesion 152
  karyorrhexis *153*
  leukocyte disease 154
  osteosarcoma 154
  osteosclerosis 154
  sclerosis of bowel 154
  sclerosis of skin 154
  telangiectasia 152, *153*
  vascular pathology *153*
  vascular sclerosis 152, *153*
  vasculitis 152
Radiation injury 150–155
  actinic elastosis 56
  cell sensitivity 152
Radiation scalpel 150
Radiation therapy 154
Raynaud phenomenon, scleroderma 182
Raynaud syndrome 148
Reactive pulmonary fibrosis, cystic fibrosis 64
Reactive systemic amyloidosis 52
Receptor dysfunction 32, *33*
Receptor lesions 32
Records
  biologic, longevity 124
  clinical *see* Clinical records
Recovery time 68
Recuperation 4
Recurrence
  of disease 4
  early 350
  tumor 350
Recurrent lung infection, cystic fibrosis 64
Recurrent thrombus 408
Red hepatization, lobar pneumonia 210, *211*
Red thrombus 406, *407*
Reed–Sternberg cells 362, *363*
Refsum disease 86
Regeneration 310, *311*
  inflammation, acute 222
  physiologic 309
Regenerative connective tissue zone, granulating inflammations 226
Regenerative hyperplasia 118
Regulatory mechanisms, tissue repair 309
Rejection
  acute 178
  chronic 178
  hyperacute 178
Relative iron deficiency 72
Remission 4
  tumor 350
Remote metastasis 346
Renal agenesis *301*
Renal calcinosis 136, *137*
Renal failure, acute, shock kidney 396
Renal hypertension 386–388
Renal infarction 412
  anemic 420
  subtotal 420
Renal pelvic calculus *139*
Renal tubule steatosis *85*
Renin-angiotensin-aldosterone system deregulation, essential hypertension 386
Renovascular hypertension 388
Reoviridae 240
Reparative interstitial fibrosis, ischemia, chronic relative 416
Reserve space filling 428
Resistance to disease 4
Resistance to therapy, tumor cells 338
Resolution lobar pneumonia 210
Resorption atelectasis, respiratory syncytial virus infection 242
Resorption zone, granulating inflammations 226
Resorptive giant cells 10
Respiratory burst 26
Respiratory syncytial virus (RSV) 242
Restrictive dermopathy 54, *55*
Restrictive pulmonary hypertension 390
Retention steatosis 84, *85*
Reticulohistiocytic system (RHS) block 26
Retina, pseudoxanthoma elasticum 56
Retinitis pigmentosa 86, *87*
Retinoblastoma gene 324
Retinoblastoma syndrome 290, *291*
Retinoblastoma tumor suppressor 290
Retinopathy
  diabetic 80, *81*
  Tay-Sachs disease 94
Retrograde embolisms 410
Retroviridae 244
Retroviruses
  highly carcinogenic 334
  moderately carcinogenic 334
Reversible stage of shock 394
Reversibly postmitotic cells, internal organ wound healing 314
Rhabdomyoma 356
Rhabdomyosarcoma 356
Rhabdoviridae 244
Rhesus incompatibility 170
Rheumatic fever 234
Rheumatic granuloma 234, *235*
Rheumatoid arthritis 184, *235*
Rheumatoid factor 184
Rheumatoid granuloma 234, *235*
Rhinencephalon, trisomy 13, 288
Rhinitis
  acute 204, *205*
  allergic 168
  chronic atrophic 224
  viral (coryza) 204, *205*, 240
Rhinosporidiosis 272
Rhinosporidium seeberi 272, *273*
Rhinoviruses 240
Rhodopsin 114
Ribosome-layer complexes 12, *13*
Rickettsia prowazekii 266
Right heart failure, venous thrombosis 408
Right heart insufficiency, cardiac edema 424
Rigor mortis 5
Risk factors, atherosclerosis 90
Risus sardonicus 258, *259*
RNA viruses
  enveloped double stranded 246–249
  enveloped single-strand 240–246
  infection *239*

tumor viruses 244, 334
unenveloped double-stranded 240
unenveloped single-stranded 238–240
Rocker-bottom feet, trisomy 13, 288
Rotaviruses 240, *241*
Rotor syndrome 110
Rough endoplasmic reticulum
α_1-antitrypsin precursor retention 44, *45*
lesions/changes 12–13
peroxisome *25*
Rubber man, EDS type I *39*
"Rubber skin/joints," 38
Rubella 240, *241*
Rubella cataract 240, *241*
Rubella hepatitis 240
Rubella placentitis 240
Rubella syndrome, congenital 240
Rubiviruses 240
Rubor 194
Rule of nines 146, *147*
Rumpel–Leede test 400
Russell bodies 12, *13*
Rusty pancreas *73*

S

S-100 antigen 326, *327*
neurofibroma 368
Saber shins, congenital syphilis 306
Saccharose–isomaltose intolerance 78
Saccular aneurysm 62
Saddle nose, congenital syphilis 306
Sago spleen type amyloidosis 52, *53*
Salivary gland, carcinoma 18
Salivary stones, hypercalcemia 70
Salmonella enteritidis 260
Salmonella enteritis 260
Salmonella paratyphi 260
Salmonella typhi 260, *261*
Salpingitis, chronic *221*
SALT (skin associated lymphoid tissue) 157
Sanarelli–Shwartzman reaction 394, *395*
Sanderson cushion 120
Sand grain urocystitis 280
Sarcoidal granulomas 230, *231*
Sarcoidosis 230
Sarcoma 320
Sarcomatous lymphangitis 346
Sarcomatous mesothelioma *143*
Satellite necrosis 178
Saturnine encephalopathy, lead poisoning 142
Scab *313*
Scab necrosis 130
Scar *313*
Scarlet fever 216
Scar neuromas 316, *317*
Scarring, tumor regression 350
Schaumann bodies 228
Schistosoma 280
Schistosoma haematobium 280, *281*
tumorigenesis 334
Schistosoma japonicum 280, *281*
Schistosoma mansoni 280, *281*
Schistosomiasis *335*
granuloma *281*
hepatosplenic 280
intestinal 280
Schistosomula 280
Schwann cell injury, toxic 141
Schwartz-Bartter syndrome 354
SCID (severe combined immunodeficiency) 190, *191*
Sclerodactyly, scleroderma 182
Scleroderma 182, *183*
Sclerodermatous basal cell carcinoma 384
Sclerosing alveolitis 396
Sclerosing panencephalitis, subacute 242
Sclerosis 40 *see also* Vascular sclerosis
edema 426
nodular, Hodgkin's lymphoma 362, *363*
progressive systemic 182, *183*
radiation-induced 154
Scolex
Echinococcus granulosus 282
Taenia saginata 280, *281*
Scourging 396
Scrapie 252
Scurvy 38, *39*
Sea-blue histiocytes, sphingomyelin lipidosis 92
Seborrheic eczema 176, *177*
Seborrheic keratosis 370
Secondary amyloidosis 52
Secondary postinfective disorders, inflammation, acute 222
Secondary siderosis 72
Secondary union
fracture healing 314
wound healing 310
Second-degree burns 146, *147*
Second-degree frostbite 148
Selectins, cell contact mechanisms 295
Senile atrophy 124
Senile elastosis 54
Senile emphysema 44
Senile tumors 336
Sepsis 222, *223*
Aspergillus 272, *273*
candidal 270
nonreactive, hyperacute tuberculosis 232
Septal cirrhosis 42, *43*
Septicopyemia 222, *223*
Septicopyemic excretory abscess 212
Septic shock 394
Sequence, multiple malformations 302
Seroma 312
Seromucous inflammation 204, *205*
Serotonin 202
Serous alveolitis 204, *205*
Serous catarrhal inflammation, rhinitis, acute 204
Serous inflammation 204
Serous tissue inflammation 170
Serpentine aneurysm 62
Serum disease 172
Serum protein deficiencies 96
Severe combined immunodeficiency (SCID) 190, *191*
Sex chromosome aberrations 290
Sheehan syndrome 396
Shigella 260
Shingles 246
Shock 394–397
anaphylactic 394
cardiogenic 394
endocrine 394
hemodynamic forms 394–397
hypovolemic 394
pathogenetic forms 394
Shock encephalopathy 396
Shock endocarditis 396
Shock endocrinopathy 396
Shock enteropathy 396
Shock hepatopathy 396
Shock kidney 396, *397*
Shock liver *397*
Shock lung 396, *397*
Shock pancreatopathy 396
Shock pituitary *397*
Short stature, chondrodystrophia fetalis 16, *17*
Shrapnel embolisms 410
Shrinking necrosis 132
Siamese twins *see* Conjoined twins
Siderosis
hepatic 106
Mamillary body *145*
plasma cell 72
secondary 72
Signal transducing proteins 322
Signal transduction, apoptosis 128
Signet ring carcinomas 372
colorectal 380, *381*
Silicosis, focal pulmonary fibrosis 40

Silicosis granuloma *41*
Silicosis lung *41*
Simian creases, trisomy 21, 288
Single-gene disorders 292–293
Single-kidney model of renal hypertension 386
Single-point mutation, proto-oncogenes 322, *323*
Sjögren's syndrome 184, *185*
  mitochondrial autoantibodies 22
Skeletal lesions, Marfan syndrome 48
Skin associated lymphoid tissue (SALT) 157
Skin cancer, environmental factors 336
Skin disease, drug-induced 140
Skin jaundice *109*
Skin mycoses 268
Skin tattoo *105*
Skin ulceration 154, *353*
Skin wound healing 310–313
  complications 312
Skip lesions, Crohn's disease 230
SLE (systemic lupus erythematosus) 180
Slow virus infection 252
Small bowel
  gluten enteropathy 82, *83*
  hemorrhagic infarct *415*
  nonocclusive infarct *415*
  Whipple disease *83*
Small cell carcinoma, bronchogenic 378, *379*
Smallpox, variola virus 246
Smoking *see* Cigarette smoke
Smooth endoplasmic reticulum
  disorders 14
  lesions 14–15
  peroxisome *25*
Smudge cells 250, *251*
Sodium excretion, essential hypertension 386
Soft tissue tumors 355
Solid adenoma 370, *371*
Solid carcinomas 372
  urothelial 372
Solitary regeneration 309
Somatic mutations, tumorigenesis 342
Species specificity, of carcinogens 330
Sphingolipidoses 92–95
Sphingomyelin lipidosis 92
Spider cells, rhabdomyoma 356
Spina bifida *301*
Spindle cell nevi 366
Spleen 157
  amyloidosis *49*
  infarct *419*
  spotted 418
  sugar-coated *47*
Splendore–Hoeppli phenomenon 256
  Coccidioides immitis 272
Splenomegaly, portal hypertension 392, *393*
Spongiform dystrophy
  Creutzfeldt–Jakob disease *253*
  phenylketonuria 96
  prion diseases 252
  Wilson's disease 74
Spongiform encephalopathy 252
Spontaneous abortions, chromosome aberrations 287
Spontaneous remission 350
Sporozoa 276–278
Sporozoites, malaria 278
Spotted spleen 418
Sprue
  celiac 82
  nontropical 82, *83*
Squamous cell carcinoma 372, *373*
  bronchogenic 378
Squamous cell papilloma *371*
Squamous metaplasia 318, *319*
Squamous spindle-cell carcinoma 372
Stable insertion, DNA tumor viruses 332
Stable plaque, atherosclerosis 90
Staging, tumors 355
Staphylococci 254, *255*
Staphylococcus aureus 254
  abscess-forming inflammation 212
Staphylococcus epidermidis 254
Staphylokinase, staphylococci infections 254
Starling's hypothesis 424
Starvation 84, *85*, 124
Steatorrhea 82, 86
Steatosis *see* Fatty degeneration
Stem cell compartment, tissue repair 308
Stem-cell metaplasia 318
Stenosis 300
  coronary artery *419*
  idiopathic hypertrophic subaortic 116, *117*
  pyloric 116
  tumor complications 352
Steroid hormone synthesis defect, adrenogenital syndrome 122
Stewart–Treves syndrome 426
Stomach cancer, environmental factors 336
Stomach ulcer 218, *219*
"Stone child," 136
Stone disorders **134–139** *see also* Calculi
Straddling embolisms 410, *411*
Strain, mesenchymal metaplasia 318
Stratified columnar epithelium 318
Streptococci 254, *255*
  α-hemolytic 254
  β-hemolytic 254
  γ-hemolytic 254
Streptococcus pyogenes 254
Streptokinase, Streptococcus pyogenes 254
Streptolysin O and S, Streptococcus pyogenes 254
Stress factors, essential hypertension 386
Stroke 398
Structural alteration, proto-oncogenes 322
Subacute disorders 4
Subaortic stenosis, idiopathic hypertrophic 116, *117*
Subcutaneous mycoses 268
Subdural hematoma 316, *317*
Subendocardial infarcts 418
Subfalcine herniation 428, *429*
Sublethal cell death **116–127**
Substantia nigra 114, *115*
Subtotal renal infarcts 420
Sugar-coated spleen *47*
Sunflower cataract, Wilson's disease 74
Superficial mycoses 268
Superficial spreading melanoma 366, *367*
Supernumerary malformations 300
Suppressor genes, proliferation inhibitors 296
Suppurative appendicitis *215*
Suppurative bronchitis *213*
Suppurative inflammation 212
Surface antigens, enterobacteriaceae 260
Surfactant 16
Susceptibility genes, tumor development 338
Susceptibility to infection, diabetics 80
Swelling, mitochondrial 18, *19*
Swelling fibrinoid 46, *47*
Swiss agammaglobulinemia (SCID) 190, *191*
Sydenham chorea 234
Syndactyly *297*
  apoptosis 296
Syndrome, multiple malformations 302
Syphilis 262
  childhood 306
  congenital 306
Syphilitic aortitis 58, *59*
Syphilitic osteochondritis 306, *307*
Systemic amyloidosis 52
Systemic anaphylaxis 168
Systemic autoimmune disorders 46, 180–185
Systemic immune complex disease 172

Systemic lupus erythematosus (SLE) 180
Systemic mycoses 268
Systemic toxoplasmosis 276
Systemic tumor complications 352–354

T
Tachyzoite, Toxoplasma gondii 276
Tadpole cells, rhabdomyosarcoma 356
Taenia saginata 280, *281*
Taenia solium 282, *283*
Tangier disease 86
Tapeworm
  beef (Taenia saginata) 280, *281*
  canine (Echinococcus granulosus) 282, *283*
  fox (Echinococcus multilocularis) 282
  pork (Taenia solium) 282, *283*
Tardieu ecchymoses 398
Tattooing 104, *105*
Tay-Sachs disease 94, *95*
T cell (lymphocyte) 158
  cytotoxic 158
  helper cells 158
  suppressor cells, loss of activity 180
T-cell reaction *159*
TCR γδ cells 158
Telomerase erosion 124
Temporal arteritis 58, *59*
Teratogenesis 304
Teratogenic injury 294
Teratologic determination period 294
Teratologic terminology 294
Teratoma 382
  immature 382, *383*
  mature 382, *383*
Testicular infarct, hemorrhagic *423*
Testicular purpura *399*
Tetanospasmin 258
Tetanus 258
Tetracycline 104
Textural defect in vessel wall 398
Thalidomide embryopathy 302
T helper cells 158
Thermal erythema 146
Thermal injury 146–149
Thigmotaxis 295
Third-degree burns 146, *147*
Third-degree frostbite 148
Thoracogastroschisis 304, *305*
Thoracopagus 298
Thorotrast, tumorigenesis 334, *335*
Thrombasthenia 400
Thrombi, forms of 406
Thrombocytes 200
Thrombocytopenia 400
  drug-induced damage to blood cells 140
  hemorrhagic diathesis 400
Thromboembolism 408, 410–412
Thrombosis 404–409
  arterial 408
  cardiac 408
  forms of 408
  signs 406
  tumor complication 352
Thrombus *409*
  adhesion 406
  calcification 408
  hyaline 406
  laminated 406
  mixed 406
  obliteration of the vessel 408
  organization 408
  recurrent 408
  red 406
Thymus 157
  aplasia 189
  dysplasia 190, *191*
  normal *191*
  in SCID *191*
Thyroid carcinoma 18
Thyroid hyperplasia 120
Thyroiditis, Hashimoto's 22
Tissue destruction
  foreign-body granuloma 236
  tumor dissemination 344, *345*
Tissue dissemination 318
Tissue invasion 321
Tissue repair **308–319**
  regulatory mechanisms 309
  wound healing 310–317
T lymphocyte *see* T cell (lymphocyte)
TNM system 355
  breast carcinoma 376
  colorectal carcinoma 380
  prostatic carcinoma 374
Togaviridae 240
Tongue, amyloidosis *49*
Tonsillar herniation 428, *429*
Tophi 102, *103*
Torulosis *see* Cryptococcosis
Total infarct 420
  renal 420
Touton giant cells 90, *91*
Toxic allergy 141
Toxic arterial disease 141
Toxic bronchial disease 141
Toxic cirrhosis 42
Toxic disease of alveolar cells 141
Toxic disease of tubules 141
Toxic erythrocyte disease 141
Toxic glomerular disease 141
Toxic shock syndrome toxin 254
Toxic venous disease 141
  liver toxins 141
Toxin A, Clostridium difficile 258
Toxin B, Clostridium difficile 258
Toxoplasma encephalitis *307*
Toxoplasma gondii 276, *277*
Toxoplasmic lymphadenitis *277*
Toxoplasmic myocarditis *277*
Toxoplasmosis 276
  fetal 306
  prenatal 276
  systemic 276
Trabecular atrophy 126
Tracheitis, candidal *271*
Tracheobronchitis, influenzal 208, *209*
Trachoma 266
Transforming genes, human papillomavirus (HPV) 332
Transforming infection, RNA tumor viruses 334
Transient hypogammaglobulinemia 188
Translocation of proto-oncogenes 322
Transmural infarcts 418
Transmyocardial laser revascularization 150, *151*
Transplant allergy 178
Transplantation antigen 164
Transplantation pathology 178
Transplant rejection *179*
Transplant vasculitis *179*
Transtentorial herniation 428
Trapezoidal cortical infarcts 420
Traumatic fat embolism 412
Trehalose 6,6'-dimycolate, 264
Trematodes 280
Treponema pallidum 262
  syphilitic aortitis 58
Triad mitotic figure *155*
  radiation therapy 154
Triangular cortical infarcts 420
Trichinella spiralis 284, *285*
Trichinosis 284
Trichomonas vaginalis 274, *275*
Trichomoniasis 274
Trichophyton mentagrophytes 268
Trichophyton rubrum 268
Trichophytosis, deep 268
Trichopoliodystrophy 54
  copper deficiency 74
Tricolor phenomenon 148
Triploidy 287, 288, *289*
Trisomic zygote viability 287
Trisomy 287
Trisomy-13 288, *289*
Trisomy-18 288, *289*
Trisomy-21 288, *289*
Tropheryma whippleii, Whipple disease 82, *83*
Trophoneurotic atrophy 124
True aneurysm 62, *63*

Trypanosoma cruzi 274
T suppressor cells, loss of activity 180
Tubercle 232
Tuberculin reaction 176
Tuberculoid reaction 264
Tuberculosis
  bacteria causing 264
  focal pulmonary fibrosis 40
  miliary *233, 265*
Tuberculous cavernous defect *265*
Tuberculous granuloma 232, *233*
Tuberous xanthomas 90
  hyperlipoproteinemia type III 88, *89*
Tubular adenoma 370
Tubular aneurysm 62
Tubular carcinoma 372
  breast 376
Tubular pathology, hyperoxaluria *99*
Tumor(s) 194
  antigens 326
  bone 358
  borderline 340
  brain 366–369
  cartilage 358
  classification 355–385
  complications 352–354
  compression *353*
  definition 320
  development, alcohol abuse 336
  dissemination 344–350
  dysontogenetic 382
  embolism *349*
  fatty tissue 356
  fibrous 356
  immunity 326
  malignant epithelial 372
  melanocytic 366
  mesenchymal 355
  metastases 352
  muscle 356
  necrosis 352, *353*
  nonepithelial 355–369
  non-metastasizing malignant 384
  pathology **320–385**
  perfusion 344
  promotion 338
  regression 350–354
  risk factors 336
  staging 355
  typing 355
Tumor anemia 352
Tumor-associated angiogenic factors 344
Tumor-associated antigens 326
Tumor blast cells, Hodgkin's lymphoma 362
Tumor cells
  DNA content 342
  giant cells 10
  multinucleated *343*
  nucleoli 10, *11, 343*
Tumor embolism *349*
Tumor giant cells 10
Tumor grading 355
  prostatic carcinoma 374
Tumorigenesis 304, *329,* 340–354
  causal 321–339
  chemical 328–331
  early stages 340
  formal 340–354
  physical 334
  viral 332–334
Tumor immunology 326
Tumor-like lesions 320
Tumor necrosis factor 202
  apoptosis 128
Tumorous lymphangitis 346
Tumor predisposition 336
  age 336
  susceptibility to addiction 336
Tumor-specific antigens 326
Tumor suppressor genes 324
  breast carcinoma 376
  colorectal carcinoma 380
  prostatic carcinoma 374
Turner syndrome 290
Twin–twin transfusion syndrome 298, *299*
Two-kidney model of renal hypertension 386
Type A gastritis 186, *187*
Typhoid fever 260, *261*
Typhoid granuloma *261*
Typhus 266
Typhus nodules 266
Typing of tumors 355
Tyrosine derivative pigments 104, 112–114
Tyrosine kinase 32

U

Ulcer
  atherosclerotic 90, *91*
  chronic 226, *227*
  gastric 218, *219*
  peptic 70, 218, *219*
  radiation-induced (cutaneous) 154
Ulceration, skin 154, *353*
Ulcerous amebic colitis 276
Ulcerous colitis 218, *219*
Ulcerous necrotizing inflammation 218
Ultimate carcinogen 330
Ultraviolet radiation
  cell injury 150
  tumorigenesis 334
  xeroderma pigmentosum 6
Uncal herniation 428
Unrestrained growth 321
Unstable plaque, atherosclerosis 90
Urate crystal deposition 102
Urate nephropathy, chronic 102
Urate urinary calculi 138
Urease test, Helicobacter pylori infection 262
Urea synthesis disorders 100
Urinary calculi 138
Urocystitis, sand grain 280
Urogenital bilharziosis 280
Urogenital bleeding 402
Urolithiasis 138
Urothelial carcinoma 372
Urothelial metaplasia 318
Urothelial papilloma 370
Urothelium 318
Urticaria
  drug-induced skin disease 140
  serous inflammation 204
  serum disease 172
Uveitis 234

V

Vacuole formation, rough endoplasmic reticulum 12, *13*
Valvular calcific degeneration 134
Varicella zoster virus 246
Varicelliform hydroa 106, *107*
Varices
  esophageal 392, *393*
  thrombosis 408
Varicose veins *405*
Variola virus 246
Vascular atrophy 124
Vascular diameter 344
Vascular direction, changes 344
Vascular disease, hypertensive 388
Vascular edema 426
Vascular erosion 398
Vascular inflammation 398
Vascular necrosis 398
Vascular pathology, radiation-induced *153*
Vascular permeability 198, *199*
Vascular resistance, increases and hypertension 388
Vascular sclerosis 398
  radiation induced 152, *153*
Vascular sinus transformation 426, *427*
Vascular structures, abrupt termination 344
Vascular thrombosis, tumor complication 352
Vasculitis
  immune complex 172
  leukocytoclastic *173,* 400
    serum disease 172
  lupus *173*
    serum disease 172
Vasoconstrictive pulmonary hypertension 390
Vasogenic cerebral edema 428
Vena cava pattern, hematogenous metastasis 348
Venous disease, toxic 141
Venous drainage obstruction, tumor 352
Venous edema 424

Venous hemodynamic disorders 422
Venous occlusion 414
Venous stasis 422
  acute 422
  chronic 422
"Venous stone," 136
Venous thromboembolism 410
Venous thrombosis 408
Ventricular perforation *399*
Ventricular septum defects, rubella infection 240, *241*
Verruca vulgaris 250, *251*
Vertical inward growth 376
Vertical outward growth 376
Vesicle formation, smooth endoplasmic reticulum 14
Vessel wall weakening 398
Vestige 300
Vibrio cholerae 262, *263*
Villous adenoma 370
Vimentin 34
Vincent angina (acute necrotizing ulcerous gingivitis) 218, *219*
Viral encephalitis 238
Viral giant cells 10
Viral hemorrhagic fever 216, 242
Viral inclusions 8, *9*
Viral infection **238–253,** *239*
  see also individual viruses
  fetal inflammation 220
Viral oncogenes 332
Viral tumorigenesis 332–334
Virchow cells, lepromatous reactions 264
Virchow's triad 404
Virulence factors
  Candida albicans 270
  enterobacteriaceae 260
Virulence of pathogens 222
Viruses *see also* individual viral infections
  enveloped double-stranded RNA 246–249
  enveloped single-strand RNA 240–246
  material production, smooth endoplasmic reticulum 14
  reactivation, herpes simplex virus 246
  unenveloped double-stranded DNA 250
  unenveloped double-stranded RNA 240
  unenveloped single-stranded DNA 250
  unenveloped single-stranded RNA 238–240
Visible light, cell injury 150
Visual purple 114
Vitamin D_3 deficiency, hypocalcemia 70
Vitiligo, melanin synthesis 112
VLDL (very low density lipoprotein) *89*
  breakdown, hyperlipoproteinemia type IV 88
Von Euler–Liljestrand reflex 390
Von Gierke disease 76, *77*
Von Recklinghausen–Appelbaum disease 72
Vulnerability 68
Vulvovaginitis, herpes simplex virus 246

W

Waardenburg syndrome, neuromelanin 114
WAGR syndrome 290
Waldenström macroglobulinemia 190, 364
Wallenberg syndrome 420
Warthin–Finkeldey cells, measles virus infection 242, *243*
Warts, common 250
Waterhouse–Friderichsen syndrome 216, 396
  Neisseria meningitidis 256
Waxy coat, tuberculosis bacteria 264
Waxy degeneration *see* Zenker degeneration
Wedge shaped infarcts 418
Wedge shaped vertebrae 126
Wegener granulomatosis 184, *185*
Werewolf syndrome 106
Wernicke–Korsakoff syndrome, alcoholism 144
Whipping 396
Whipple disease 82
White platelet thrombus 406
Widal reaction, typhoid fever 260
Wilms tumor 290, *291*
Wilms tumor gene 324
  inactivation 324
  WAGR syndrome 290
Wilson's disease 74
Wilson's hepatitis *75*
Wiskott–Aldrich syndrome 190
Wool sorter's disease 258
Wound bed inflammation *313*
Wound healing 310–317, *311*
  central nervous system 316
  internal organs 314
  peripheral nerves 316
  skin 310–313
WT-1 gene 324
WT-2 gene 324
Wuchereria bancrofti 284, *285*

X

Xanthelasma 88
Xanthomas 90, *91 see also* Eruptive xanthomas
  tuberous 88, *89,* 90
Xenograft 178
Xeroderma pigmentosum 6, *7*
  chromosome breakage syndrome 292
Xiphopagus 298
X-linked agammaglobulinemia 188
X-linked dominant inheritance 292
X-linked recessive inheritance 292
XYY syndrome 290

Y

Yeasts 270
Yellow fever 240
Yellow hepatization, lobar pneumonia 210, *211*
Yellow-tan infarct, myocardial infarction 418
Yersinia 260
Yersinia pestis 216
Yolk sac tumor 326, *327*

Z

Zellweger syndrome 24, *25*
Zenker degeneration 130
  typhoid fever 260
Ziehl–Neelsen stain
  ceroid 28
  Mycobacterium leprae 264
  tuberculosis bacteria 264
Zoomastigophora 274
Zygomycetes 272