

Index

A

- Acanthamoeba* species
 general description, 6, 20, 68-69, 72-73
 procedures for diagnosis, 462
 cysts, 74, **75**
 trophozoites, 74, **75**
astronyxis, 74, 75
castellanii, 74, 75
culbertsoni, 73
hatchetti, 73
polyphaga, 73
rhysodes, 73
Acanthocephala, 236
 Acetic Acid fixative, 472
 Acid-fast stain
 procedures, 428-432
 stained organisms, **109, 113, 117**
Aedes species, 252, 259
 Agar plate culture for
 Free-living amebae, 461-462
Strongyloides, 439, **440**
 70% Alcohol and 5% Glycerin fixative, 472
 Alcohol, Formalin and Acetic Acid (AFA) fixative,
 472
 Algae
 in fecal specimen, 392, 393, 394, **395**, 406, **407**
 Algorithm for diagnosis of coccidia and
 microsporidia, 436
Alternaria conidium in fecal specimen, 392, **393**
 Amastigotes,
Leishmania species, 158, **159**
 Amebae
 intestinal
 cyst morphology, 5
 general description, 3-6
 trophozoite morphology, 4
 Amebiasis
 liver and lung specimens, 450-451
 sigmoidoscopy for, 446-447
 sputum specimen, 444
Anatrichosoma species
 general description, 182, 240
 eggs, 240, **241**
Ancylostoma
braziliense, 221
caninum, 221, 224, **225**
ceylanicum, 221
duodenale
 general description, 180-181, 184, 185,
 221, 222
 eggs, 217-218, **219**
 larvae, 184, 185, 222, **223**
tubaeforme, 221
Angiostrongylus
cantonensis, 449
costaricensis, 451
Anisakis simplex
 general description, 182
 larvae, 182
Anopheles species, 252, 259
 Apicomplexan parasites,
 blood, 12, 14-17
 intestine and tissues, 12, 18-21, 20-21
 Arthropods, 374-381, **377, 379, 381**
 Artifacts, 384-413, 385, **389, 391, 393, 395, 397,**
399, 401, 403, 405, 407, 409, 413
 in blood, 408, **409**, 410, **411**, 412, **413**
 in feces, 388, **389**, 390, **391**
 amebalike, 385, 404, **405**
 egglike, 390, **391**, 392, **393**, 394, **395**, 396, **397,**
398, 399, 406, **407**
 larvalike, 400, **401**
 microfilariallike, 412, **413**
 malarialike, 408, **409**
 wormlike, 400, **401**, 402, **403**, 412, **413**
 Ascarids, animal, 179
Ascaris species, 179, 218, **219**, 390
 larvae, 248-250, **251**
Ascaris lumbricoides
 general description, 180-181, 197, 384
 eggs, 180, 197-198, **199**, 200, **201**
 Aspirates from
 cerebrospinal fluid, 448
 lymph nodes, 448
 skin ulcers, 448
 small intestine, 445-446
Giardia, 445-446
Strongyloides, 445
 sputum, 444-445
 Auramine-Rhodamine stain, **109**
 Autofluorescence
 procedures, 434-435
 stained organisms,

B

- Babesia*, 12, 148-149
bigemina,
 stages in thin blood films, 150, **151**
divergens,
 stages in thin blood films, 150, **151**, 152, **153**
duncani,
 stages in thin blood films, 152, **153**
equi (see *Theileria equi*)
gibsoni, 152
microti, 380
 stages in thin blood films, 150, **151**, 152,
153
- Bacillary exudate
 in fecal smear, 404, **405**
- Baermann funnel technique, 226, 443
- Balamuthia mandrillaris*
 general description, 6, 20, 72-73
- Balantidium coli*
 general description, 2, 97
 cysts, 24, 98, **99**
 trophozoites, 22, 98, **99**
- Baylisascaris procyonis*
 general description, 182, 242-244, **245**, 246, **247**
 eggs, 244, **245**, 246, **247**
- Bean sprouts
 in fecal specimen, 388, **389**
- Beaver body, 384, 392, **393**
- Bedbug, 375-376, **377**
- Bee pollen
 in fecal specimen, 394, **395**
- Bertiella* species
 general description, 334, 367
 eggs, 367-368, **369**
 larvae, 334
mucronata, 367
studerii, 367
- Biomphalaria* species, 317
- Blastocystis hominis*
 general description, 34, **35**, 103-104, **105**
- Blastomyces*, 167
- Blood
 concentration procedures, 458-461
 cultures (see blood flagellates)
 smear
 artifacts and cellular elements, 386, 408,
409, 410, **411**, 412, **413**
 microfilariallike artifacts, 412, **413**
 preparation, 452
- Blood examination, 452-461
 blood film preparation, 452
 blood film staining, 454-457
 blood film examination, 457
 concentration, 458-461
- Blood flagellates, in vitro culture of, 463-465
- Blood fluke, 299
- Bone marrow specimen examination, 448
- Borrelia burgdorferi*, 149
- Brachiola* species, 19, 123
- Brugia*
malayi, 188, 256, **257**, 259, **260**, 262, **263**, 265,
 268, 291
 microfilariae, 182, 266, **267**
timori, 259, 265
 microfilariae, 182, 266, **267**
- Buffy coat concentration procedure, 458
- Bulinus* species, 321

C

- Cabot ring, 384, 408, **409**
- Calcofluor white, staining procedure for
 microsporidia, 435-436
- Calliphora vomitoria*
 general description, 376, **377**
- Candida* species, 168
- Capillaria*
aerophila (= *Eucoleus aerophila*), 321
hepatica, 208-209, **208**
 eggs, 179, **208**, 210, **211**
 larvae, 182
philippinensis, 208
 eggs, 179, 208, 210, **211**
 larvae, 182, 208, 210, **211**
- Carmine stain
 procedure, 475-476
 staining, **329**, **331**, **333**, **339**, **345**, **361**, **365**
- Catastomus commersoni*, 308
- Cellular artifacts
 in blood, 408, **409**
 in fecal smears, 384-386, **385**
- Cellophane-covered thick smear technique,
 Kato-Katz procedure, 436-437
- Cellophane tape for perianal skin, 443-444

- Center for Disease Control (CDC), serologic tests, 477-478
- Centrocestus formosanus*, 301
- Cerebrospinal fluid specimen examination, 448-449
- Cestodes (see also specific organisms), 334-371
 fixation and study of, 476-477
 general description, 334, **335**
 uncommon, 367-369, **369**
- Chagas disease, see *Trypanosoma cruzi*
- Charcoal culture for nematode larvae, 441
- Charcot-Leyden crystals
 in fecal specimen, 104, **105**, 384
- Chemicals, dangerous, 482-483
- Chilomastix mesnili*
 general description, 6, 87
 cysts, 8, 24, 88, **89**, 90, **91**
 trophozoites, 7, 22, 88, **89**, 90, **91**, 100, **101**
- Chromotrope stain
 procedures, 432-434
- Chrysops* species, 269
- Ciliary tufts
 in fecal smear, 404, **405**
- Ciliophora, 2
- Cimex*
hemipterus, 375-376, **377**
lectularius, 375
- Citrus particles
 in fecal specimen, 388, **389**
- Clonorchis*
 metacercariae, 308
sinensis
 general description, 298, 299, 308-309
 adult worms, 299, 330, **331**
 eggs, 299, 300, 302, **303**, 310, **311**
- Coccidia
Cryptosporidium, 106-108, **109**
Cyclospora, 110-113, **113**
Isospora, 114-116, **117**
Sarcocystis, 114-116, **117**
Toxoplasma, 118-120, **121**
- Coenurus, 370, **371**
- Columnar epithelial cells,
 in fecal smear, 384, **385**, 404, **405**
- Combination iron hematoxylin/acid-fast stain,
 procedures, 428-429
- stained organisms, **109**
- Concentration procedures
 for blood, 458-461
 buffy coat, 458
 Knott, 460
 membrane filtration, 460-461
 microhematocrit, 458
 triple centrifugation, 458
- Conidium
 in fecal specimen, 392, **393**
- Contracecum*, 249
- Cryptosporidium* species, 108, **109**, 110-111
canis, 13, 20, 106
felis, 13, 20, 106
hominis, 13, 20, 106
 oocysts, 106-107
meleagridis, 13, 20, 106
muris, 13, 20, 106
parvum
 general description, 12-13, 106-107
 oocysts, 25, 104, **105**
- Crystals, 384
- Ctenocephalides* species
 general description, 374, 380, **381**
- Culex* species, 252
- Culicoides* species, 275, 279, 287
- Culture methods
 for blood flagellates, 463-465
 NNN medium, 463
 nutrient blood agar, 463-464
 USAMRU blood agar, 464
 Schneider *Drosophila* medium, 464-465
 for cestode eggs, 466
 for free-living amebae, 452
 for nemaode eggs, 465
 for trematode eggs, 466
- Culture of nematode eggs, 465
- Cultures and animal inoculations, 461-466
- Cuterebra* species, 378, **379**
- Cyclospora cayetanensis*
 general description, 13, 20, 110-111
 oocysts, 25, 107, 112, **113**
- Cysticercus* (see also *Taenia*)
bovis, 335, 342
cellulosae, 335, 347, 370
- Cysts
Acanthamoeba species, 74, **75**

- Balantidium coli*, 98, **99**
Chilomastix mesnili, 88, **89**, 90, **91**
Endolimax nana, 58, **59**, 60, **61**
Entamoeba
 coli, 48, **49**, 50, **51**
 dispar, 48, **49**
 hartmanni, 42, **43**
 histolytica, 34, **35**, **36**, **37**
 polecki, 54, **55**
Enteromonas hominis, 94, **95**
Giardia duodenalis, 82, **83**, 84, **85**, 88, **89**
Iodamoeba buetschlii, 64, **65**, 66, **67**
Naegleria fowleri, 70, **71**
Pneumocystis carinii, 168, **169**
Retortamonas intestinalis, 94, **95**
- D**
D'Antoni iodine solution, 417
Delafield hematoxylin stain
 procedures, 456-457
 stained organisms, **255**, **261**, **267**, **271**, **277**,
 281, **285**, **289**
Delusional parasitosis, 386-387
Demodex species
 general description, 375-376, **377**
Dermatobia hominis
 general description, 374
 larva & maggot, 376, **377**, 378, **379**
Diagnostic examination
 blood, 452-461
 fecal specimens, 416-436
 fluids, 444, 448-449
 tissues, 445-448, 450-451
Diatom
 in fecal specimen, 390, **391**
Dicrocoelium dendriticum
 general description, 298, 308
 adult worms, 308, 330, **331**
 eggs, 308, 310, **311**
Dientamoeba fragilis
 general description, 3, 6, 9, 77
 cysts, 8
 trophozoites, 7, 23, 78, **79**, 100, **101**
Dimethyl sulfoxide (DMSO) stain, 432
Diectophyme renale
 general description, 182, 236
 eggs, 238, **239**
- Dipetalonema* species, 182, 290
Diphyllobothrium
 latum
 general description, 299, 335, 337, 367
 adult worms, 299, 335, 337, 338, **339**
 eggs, 299, 305-306, 312, 314, **315**, 335,
 337, 340, **341**
 proglottids, 338, **339**
 nihonkaiense, 337
 pacificum, 337
 scoticum, 337
 yonagoense, 337
Diplogonoporus grandis
 general description, 334, 367
 eggs, 367-368, **369**
Dipylidium caninum
 general description, 334, 335, 359, 374
 adult worms, 334, 335, 359-360, **361**
 eggs, 335, 359-360, **361**
 proglottids, 338, **339**
Dirofilaria
 general description, 182, 291, 294
 adult worms, 291, 294, **295**
 filariae, 182
 immitis, 294, **295**
 repens, 291, 294, **295**
 striata, 291
 tenuis, 291, 294, **295**
 ursi, 291
Double coverglass method for wet mounts, 470
Dracunculus,
 adult worms, 182, 297, **297**
Duodenal capsule technique, 441
- E**
Echinococcus
 granulosus
 general description, 334, 342, 362-363
 adult worms, 362, 364, **365**
 hydatid sand, 362, 364, **365**
 multilocularis, 363
 oligarthrus, 363
 vogeli, 363
Echinostoma
 hortense, 298, 300-301
 eggs, 302, **303**
 ilocanum, 302

- adult worms, 328, **329**
- Ectoparasites, fixation, 497
- Eggs
- Anatrichosoma* species, 177, 237, 240, **241**
- Ancylostoma duodenale*, 174, 214, **215**, 217-218, **219**, 221-222, **223**
- animal ascarids, 179
- Ascaris* species, 172, 173, 174, 176
- Baylisascaris procyonis*, 244, **245**, 246, **247**
- Bertiella* species, 175, 367-368, **369**
- Capillaria*
- hepatica*, 172, 177
- philippinensis*, 172, **177**
- Clonorchis*
- metacercariae, 308
- sinensis*, 172, 173, 178, 298, 308
- Dicrocoelium dendriticum*, 178, 298, 308
- Diocotphyne renale*, 174
- Diphyllobothrium latum*, 172, 173, 177, 312, 314, **315**, 335, 340, **341**, 368
- Diplogonoporus grandis*, 177, 367-368, **369**
- Dipylidium caninum*, 178, 335, 359-360, **361**
- Echinococcus granulosus*, 362-363, **364**
- Echinostoma*
- bortense*, 177, 298, 300-302, **303**
- ilocanum*, 302, **303**
- Enterobius vermicularis*, 173, 175, 191-192, **193**
- Fasciola*
- hepatica*, 173, 177, 298, 304-306, **307**, 312
- Fascioloides*
- magna*, 299
- Fasciolopsis buski*, 173, 177, 298, 304-306
- Gastrodiscoides hominis*, 177, 298, 304, 306, **307**
- Gongylonema* species, 175, 237, 240, **241**
- helminth (see also specific organism), 172-178, 173, 174-178
- Heterodera* species, 384, 396, **397**
- Heterophyes heterophyes*, 178, 298, 300-302, **303**
- hookworm, 173, 217-218, **219**
- Hymenolepis*
- diminuta*, 173, 175, 334, **335**, 356, **357**
- nana*, 173, 175, 334, **335**, 351-352, **353**
- Inermicapsifer* species, 178, 367-368, **369**
- intestinal flukes, 299, 300-302, **303**, 304, 317-318, **319**, 321, **321**, 322, **323**, 325-326, **327**, 328, **329**
- Macracanthorhynchus hirudinaceus*, 178, 237-238, **239**
- Mesocestoides* species, 175, 367-368, **369**
- Metagonimus* species, 173, 177, 298, 300-301, 302, **303**
- mite, 374, **375**, 376, **377**, 396, **397**
- Moniliformis moniliformis*, 175, 237-238, **239**
- Nanophyetus salmincola*, 177, 298, 304-306, **307**
- Necator americanus*, 174, 217-218, **219**, 221-222, **223**
- Neodiplostomum seoulense*, 298, 300-302, **303**
- Oesophagostomum* species, 174, 236, 238, **239**
- Opisthorchis*
- felineus*, 308
- viverrini*, 172, 178, 298, 302, **303**, 209
- Paragonimus*, 174, 177, 298, 312-313
- africanus*, 298, 312, 314, **315**
- caliensis*, 312
- ecuadoriensis*, 312
- kellicotti*, 298, 313-314, **315**
- mexicanus*, 298, 312, 314, **315**
- peruviensis*, 312
- uterobilateralis*, 298, 312, 314, **315**
- westermanni*, 173, 298, 312-314, **315**
- Phaneropsolus bonnei*, 178, 300-302, **303**
- Physaloptera* species, 175, 236, 238, **239**
- Prosthodendrium molenkampii*, 178, 298, 300-302, **303**
- Pygidiopsis summa*, 178, 298, 300-301
- Schistosoma*
- bovis*, 176, 298, 321
- haematobium*, 173, 174, 176, 298, **299**, 321
- intercalatum*, 173, 176, 298, 321
- japonicum*, 173, 176, 298, 299, 325-326, **327**
- mansoni*, 173, 176, 298, 299, 317-318, **319**
- mekongi*, 176, 298, 299, 325-326, **327**
- Spirometra mansonioides*, 337, 340, **341**
- Strongyloides*
- fuelleborni*, 175, 237-238, **239**
- stercoralis*, 174, 226
- Taenia*
- saginata*, 172, 173, 334, 335, 342-344, **345**, 347-348, **349**
- solium*, 172, 173, 334, 335, 342-344, **345**, 347-348, **349**, 370, **371**

- Ternidens deminutus*, 175, 236, 238, **239**
Toxascaris leonina, 242, 244, **245**
Toxocara
 canis, 242, 244, **245**
 cati, 242, 244, **245**
Trichostrongylus species, 173, 174
Trichuris
 trichiura, 172, 173, 176, 179, 203-204, **205**,
 206, **207**, 390, **391**
 vulpis, 176, 179, 203-204, **205**, 206, **207**
- Ekbom disease, 386
Encephalitozoon, 123-125
 hellem, 21
 spores, 123, 126, **127**
 cuniculi, 21
 spores, 126, **127**
 intestinalis, 21
 spores, 123, 126, **127**
- Endolimax nana*
 general description, 6, 57, 77
 cysts, 5, 24, 58, **59**, 60, **61**, 93
 trophozoites, 4, 23, 58, **59**, 60, **61**, 64, 100, **101**
- Entamoeba*
 coli, 3, 6, 30, 34, 45, 53
 cysts, 5, 24, 48, **49**, 50, 51
 trophozoites, 4, 23, 46, **47**, 100, **101**
 dispar, 3, 6, 26-27
 cysts, 5, 25, 48, **49**
 trophozoites, 4, 23
 gingivalis, 6
 trophozoites, 23, 36, **37**
 hartmanni, 3, 39-43, **41**
 cysts, 5, 25, 42, **43**
 trophozoites, 4, 23, 40, **41**, 42, **43**, 100,
 101
 histolytica, 3, 26-37, **29**, **31**, **33**, **35**, 39, 53
 cysts, 5, 25, 32, **33**, 34, **35**, 36, **37**
 trophozoites, 4, 23, 28, **29**, 30, **31**, 36, **37**,
 100, **101**
 polecki, 3, 6, 53
 cysts, 5, 24, 54, **55**
 trophozoites, 4, 23, 54, **55**
- Enterobius vermicularis*
 general description, 179, 180-181, 191
 adult worms, 180-181, 191, 194, **195**
 eggs, 179, 180, 191-192, **193**
- Enterocytozoon bienewisi*
 general description, 19, 21, 123-125
 spores, 123, 126-127
- Enteromonas hominis*
 general description, 19, 21, 123-125
 cysts, 8, 24, 94, **95**
 trophozoites, 7, 22, 94, **95**
- Epifluorescence, use of, **113**, **117**
 Epimastigotes,
 Trypanosoma cruzi, 164, **165**
- Epithelial cells
 in fecal smear, 384, **385**, 404, **405**
- Equipment, 482-483
 Erythrocytes
 artifacts in blood smear, 408, **409**, 410, **411**
- Euparal, mounts of cestodes, 477
Eustrongylides larvae, 248-250, **251**
 Eye specimen examination, 451-452
- ## F
- Fasciola*
 gigantica, 305
 hepatica
 general description, 298, 299, 304-305, 384
 adult worms, 299, 304, 330, **331**
 eggs, 299, 306, **307**, 312
- Fascioloides*
 magna, 299
- Fasciolopsis buski*
 general description, 298, 299, 304-305
 adult worms, 299, 304, 328, **329**
 eggs, 299, 306, **307**
- Fecal cultures of nematode larvae
 Harada-Mori, 438
 filter paper/slant, 438-439
 agar plate, 439-440
 charcoal, 441
 recovery techniques
 Baermann funnel, 442
 isolation from soil, 442-443
- Fecal examination
 direct wet mount, 416
 concentration
 sedimentation, 417-419
 flotation, 419-421
 preservation of feces, 421-422

- permanent stained smears
 preparation of smears, 422-423
 staining of smears
 combination iron hematoxylin/
 acid-fast stain, 428-429
 trichrome stain, 424-427
 iron hematoxylin stain, 427-429
 acid-fast stain, 428-429
 chromotrope stain, 432-434
 autofluorescence, 434-435
 algorithm for coccidian and microsporidia
 diagnosis, 436
- Feces
 artifacts and pseudoparasites, 384-386, 385
 examination, 416-436
 intestinal protozoa, 470-471
 parasitlike objects, 384-386, 385
 preservation, 470-471
 specimen collection and handling, 416
 specimen processing,
 concentration, 417-421
 fluorescent brighteners and ultraviolet
 microscopy, 435
 permanent stains, 425-429
 special procedures, 436-437
 wet mount examinations, 416-417
 wormlike artifacts, 384-386, 385, 388, **389**, 400,
401, 402, **403**
- Fibers
 in blood smear, 386, 410, **411**
 in fecal specimen, 384, 386, 402, **403**
- Field stain for malaria, 455-456
- Filarial worms. See also Microfilariae
 general description, 182-190, 183, 184, 185,
 186-187, 186, 188-190
- Filter paper slant culture procedure, 438-439
- Fixation methods for
 arthropods, 477
 cestodes, 476-477
 feces, 468-469
 molluscs, 477
 nematodes, 471-474
 protozoa, 420-421
 stool specimens, 467-469
 trematodes, 475
- Flagellates
 blood and tissue, 9-12
 morphologic stages, 7, 8, 11
 intestinal and atrial, 6-9
 cyst morphology, 8
 trophozoite morphology, 7
- Flea, 374, 380, **381**
- Flies (see also specific organism), 374, 376, **377**,
 378, **379**, 380, **381**
- Flotation concentration procedures, 417-421
- Flukes, 298-333, 299, **333**
 blood, 299
 intestinal, 299, 300-302, **303**, 304, 317-318,
319, 321, **321**, 322, **323**, 325-326, **327**, 328,
329
 liver, 299, 304-306, **307**, 308-310, **311**, 317-318,
319, 330, **331**
 lung, 299, 312-314, **315**
- Fly (see also specific organism)
 adult, 374
 larvae, 374, 376, **377**, 378, **379**
- Formalin-Ethyl Acetate sedimentation, 417-419
- Formol-saline solution, 468
- Free-living nematodes, 388, **389**, 400, **401**
- Fungi
 in blood smear, 386, 412, **413**
 in fecal specimen, 384, 392, **393**, 406, **407**
- G**
- Gametocytes
Plasmodium
 falciparum, 134, **135**, 144, **145**
 malariae, 138, **139**
 ovale, 142, **143**
 vivax, 130, **131**, 144, **145**
- Gastrodiscoides hominis*
 general description, 298, 304-305
 eggs, 304
- Giardia duodenalis*
 general description, 6, 81
 cysts, 24, 82, **83**, 84, **85**, 88, **89**
 trophozoites, 22, 82, **83**, 84, **85**, 100, **101**
- Giemsa stain,
 procedures, 453-455
 stained organisms, **95**, **121**, **127**, **131**, **135**, **139**,
143, **145**, **151**, **153**, **159**, **165**, **169**, **231**, **257**,
263, **267**, **273**, **277**, **281**, **285**, **289**, **293**
- Glossina* species, 161
- Glycerin jelly mounts, 473-474

- Gongylonema* species
 general description, 182, 237
 adult worms, 240, **241**
 eggs, 240, **241**
- Gordius* species, 384, 388, **389**
- Gram-chromotrope stain for microsporidians, 434
- Gymnophylloides seoi*, 301
- ## H
- Harada-Mori filter paper strip culture, 438
- Hammondia hammondi*, 119
- Haplorchis* species, 301
- Hartmannella*, 73
- Helicosporium* species, 412, **413**
- Helminths
 classification, 172-178
 diagnosis of infections, 172
 eggs, 172, 173
- Hemoflagellates, 9
- Heterodera* species, 384
 eggs, 396, **397**
 larvae, 400, **401**
- Heterophyes heterophyes*
 general description, 298, 299, 300-301
 adult worms, 299, 328, **329**
 eggs, 299, 302, **303**
- Histoplasma capsulatum*
 general description, 167
- Hookworm. See also *Ancylostoma duodenale*;
Necator americanus
 general description, 179-182, 180-181
 eggs, 214, **215**, 217-218, **219**, 226-227,
 406
 larvae, 222, **223**, 224, **225**
- Horsehair worm
 in fecal specimen, 384, 388, **389**
- Howell-Jolly body, 408, **409**
- Hoyer mounting medium, 474-475
- Hydatid sand, 362, 364, **365**
- Hymenolepis*
diminuta, 334, 335, 351-352, 355
 eggs, 335, 352, **353**, 355-356, **357**
nana, 334, 335, 351-352, 355
 eggs, 335, 351-352, **353**, 355-356, **357**
- Hyphae
 in blood smear, 412, **413**
- Hypnozoites, 12
- Hypoderma* species
 general description, 374
- Hysterothylacium*, 249
- ## I
- Immunodiagnosis procedures, 477-478
- Inermicapsifer* species
 general description, 334, 367
 eggs, 367-368, **369**
 proglottids, 367-368
cubanensis, 367
madagascariensis, 367
- Intestinal flukes (see also specific organisms),
 298-301, 299
 adult worms, 328, **329**, 330, **331**, 332, **333**
 eggs, 302, **303**, 306, **307**, 310, **311**, 314, **315**,
 318, **319**, 326, **327**
- Intestinal nematodes (see also specific organisms)
 adult worms, 180-181
 eggs, 180-181
 larvae, 180-181, 182, 183, 184, 185, 186-187,
 186
- Intestinal tract examination, 445-447
- Iodamoeba buetschlii*
 general description, 3, 4, 5, 32, 63
 cysts, 5, 24, 64, **65**, 66, **67**
 trophozoites, 4, 64, **65**, 66, **67**, 100, **101**
- Iodine staining, **193**, **223**, **229**, **319**, **416**, **417**
- Iron hematoxylin stain,
 procedures, 427-429
 stained organisms, **37**, **43**, **47**, **55**, **61**, **67**, **79**,
85, **91**, **95**, **101**, **105**
- Isolation of eggs and larvae from soil, 442-443
- Isospora belli*
 general description, 13, 20, 114-115
 oocysts, 25, 107-108, **109**, 116, **117**
 trophozoites, 23
- Ixodes scapularis*
 general description, 149, 380, **381**
- ## K
- Kato-Katz
 procedure, 436-437
 organisms demonstrated, **199**, **201**, **205**, **319**,
323, **327**, **349**, **353**
- Keys for identification of
 infective larvae, 185

- intestinal helminths, 174-178
intestinal protozoa, 22-25
microfilariae, 188-190
Kinyoun acid-fast stain,
procedures, 431
stained organisms, **199, 113, 117**
Knott concentration procedure, 460
- ## L
- Laboratory safety, 479-483
Lactophenol, clearing agent, 474
La Fuente concentration procedure, 458
Lagochilascaris larva, 246, **247**
Large intestine specimen examination, 446
Larvae
Anisakis simplex, 248-250, **251**
Ascaris species, 246, **247**
Baylisascaris procyonis, 246, **247**
Capillaria
hepatica, 182
philippinensis, 179, 208, 210, **211**
Dioctophyme renale, 236-237
Dipylidium species, 334
Diphyllobothrium latum, 334
Eustrongylides species, 248-250, **251**
fly, 374, 376, **377, 378, 379**
Heterodera species, 384
Hymenolepis species, 334
hookworm, 221-222, **223, 224, 225**
Lagochilascaris species, 246, **247**
Oesophagostomum species, 236, 238
Physaloptera species, 236-237, 238, **239**
Pseudoterranova decipiens, 182, 248-250, **251**
Strongyloides
fuelleborni, 227
stercoralis, 179, 180, 184, 185, 222, **223,**
226, 230, **231**
Taenia species, 334
Toxocara species, 246, **247**
Trichinella
britovi, 232
murrelli, 232
nativa, 232
nelsoni, 232
papuae, 232
pseudospiralis, 232-233, **232**
spiralis, 232, **232**
zimbabwensis, 232
- Leishmaniasis
cutaneous and mucocutaneous, **11**
visceral, **11**
- Leishmania* species
general description, 9, 10, **11, 155-157**
amastigotes, **11, 158, 159**
epimastigotes, **11**
morphologic stages, **11, 155**
promastigotes, **11, 158, 159**
trypomastigotes, **11**
aethiopica, 155
amazonensis, 155
braziliensis, 155
chagasi, 155
donovani, 155, 158, **159**
guyanensis, 155
infantum, 155
major, 155
mexicana, 155
panamensis, 155, 158, **159**
pifanoi, 155
tropica, 155, 158, **159**
- Lice, 374, 380, **381**
Liver flukes, 298, 299, 304, 308-309, 317
adult worms, 317-318, **319, 330, 331**
eggs, 304-306, **307, 310, 311**
Liver specimen examination, 450-451
Loa loa
general description, 186, 188, 269
microfilariae, 186, 188, 270, **271, 272, 273**
Loaina species, 291
Lung flukes, 298, 299, 312-313
adult worms, 332, **333**
eggs, 314, 315
Lung specimen examination, 450-451
Lymph node specimen examination, 448
- ## M
- Macracanthorhynchus hirudinaceus*
general description, 237
eggs, 238, **239**
- Macrophages,
in fecal smear, 384, 385, 386, 404, **405**
Maggot, 374, 376, **377, 378, 379**

- Malaria forms, unusual
in blood smears, 144, **145**
- Malarialike artifacts
in blood smears, 384-386, 385, 408, **409**, 410, **411**
- Malaria parasites. See *Plasmodium* species
- Mansonella*
ozzardi, 183, 186, 279
microfilariae, 183, 186, 280, **281**
perstans, 183, 186, 188, 287, 290, 292, **293**
microfilariae, 183, 186, 188, 270, **271**,
275-276, **277**
rodbaini, 287
microfilariae, 182, 190
streptocerca, 183, 186, 189, 190, 283, 287
microfilariae, 183, 186, 189, 288, **289**
- Mansonia* species, 252, 259
- Matchbox syndrome, 386
- Maurer dots or clefts, 12-17, 134, **135**
- Measurement of parasites, 483-484
- Meloidogyne* species, 384, 396, **397**, 400, **401**
- Membrane filtration blood concentration, 460-461
- Meningoencephalitis
eosinophilic, 449
primary amebic, 68-69
- Meningonema peruzzii*
general description, 188, 290-292, **293**
microfilariae, 188
- Mesocostoides* species
general description, 334
eggs, 334
- Metagonimus* eggs, 310, **311**
- Metagonimus yokogawai*
general description, 298, 299, 300-301
adult worms, 299, 328, **329**
eggs, 299, 302, **303**, 310, **311**
- Metorchis conjunctus*, 308
- Microfilaria bolivarensis*
general description, 182, 290
- Microfilariae
Brugia
malayi, 188, 260, **261**, 262, **263**
timori, 188, 265, **266**
Delafield hematoxylin stain
procedure, 456-457
stained organisms, **255**, **261**, **276**, **271**,
277, **281**, **285**, **289**
Dirofilaria species, 291
Key to identification of, 188-190
Loa loa, 188, 269-270, **271**, 272, **273**
Mansonella
ozzardi, 189, 279, 280, **281**
perstans, 189, 270, **271**, 275-276, **277**, 279,
290, 292, **293**
rodbaini, 189, 288, **289**
streptocerca, 189, 283, 287-288, **289**
Meningonema peruzzii, 188, 291-292, **293**
Mf. *bolivarensis*, 182, 189, 290, 292, **293**
Mf. *semiclarum*, 182, 189, 275, 290, 292, 293
Onchocerca volvulus, 189, 283-284, **285**
periodicity, 187
uncommon and poorly known, 188, 290-292,
293
Wuchereria bancrofti, 188, 252-254, **255**, 256,
257, 260
- Microfilarialike artifacts
blood smears, 408, **409**, 410, **411**
- Microfilaria semiclarum*
general description, 182, 189, 275, 290, 292, 293
- Microspora, 2
- Microsporidians
general description, 12-13, 18-21, 20, 21
- Microsporidium* species
general description, 19, 20, 21, 123-125
- Miracidia, 298
- Mite, 374, **375**, 376, **377**, 384, 396, **397**
eggs, 392, **393**
- Molluscs, fixation of, 477
- Moniliformis moniliformis*
general description, 237
eggs, 238, **239**
- Morel mushroom spore
in fecal specimen, 392, **393**
- Morgellons disease, 387
- Mounting methods for
cestodes, 477
Euparal, 477
nematodes, 473-474
glycerin jelly, 474
Hoyer medium, 474
- Mucus casts
in fecal specimen, 388, **389**
- Mudbug, 392, **393**

Mushroom spore
in fecal specimen, 392, **393**
Myiasis, 374, 378, **379**

N

Naegleria fowleri
general description, 6, 20, 68-69, 72-73
cysts, 70, **71**
trophozoites, 70, **71**

Nanophyetus salmincola
general description, 249, 298, 304-305
adult worms, 304
eggs, 304

Necator americanus
general description, 180-181, 217-218, 221, 224
adult worms, 224, **225**
eggs, 180, 217-218, **219**, 221
larvae, 184-185, 217, 221, 222, **223**

Nematoda, 172

Nematodes, 179-303, 180-181, 183, 184, **185**, **186**,
188-190
fixation and study of, 471-475
free-living, 179-182
general description, 179-190, 180-181, 183, 184,
185, 188-190

Neodiplostomum seoulense
general description, 298, 300-301
adult worms, 332, **333**
eggs, 300, 302, **303**

Neutrophils
in blood smear, 408, **409**
in fecal smear, 404, **405**

NNN medium, 463

Nosema
corneum (*Vittaforma corneum*)
general description, 21

Nutrient blood agar medium, 463-464

O

Ocular micrometer, 483-484

Oesophagostomum species
general description, 182, 184, 185, 224
adult worms, 224, **225**
eggs, 236-237, 238, **239**
larvae, 184, 185, 236-237, 238,
bifurcum, 236, 238,

Oestrus ovis
general description, 374

Onchocerca volvulus
general description, 182, 183, 186, 189, 283,
287, 291
microfilariae, 183, 186, 189, 284, **285**

Oncomelania species, 325

Onion skin
in stool specimen, 384

Oocysts
Cryptosporidium species, 25, 104, **105**
Cyclospora cayetanensis, 25, 107, 112, **113**
Isospora belli, 25, 107-108, **109**, 116, **117**
Sarcocystis cruzi, 25, 116, **117**
Toxoplasma gondii, 18, 120, **121**

Ookinetes
Plasmodium, 144, **145**

Opisthorchis
general description, 298, 300, 308
felineus, 308
viverrini
adult worms, 308, 330, **331**
eggs, 308, 310, **311**

P

Panstrongylus species, 162

Pappenheimer body, 408, **409**

Paragonimus
africanus, 298, 312
eggs, 314, **315**
caliensis, 312
ecuadoriensis, 312
kellicotti, 298, 313
eggs, 314, **315**
mexicanus, 298
eggs, 312, 314, **315**
peruviensis, 312
uterobilateralis, 298
eggs, 312, 314, **315**
westermanni, 298, 299, 312-313
adult worms, 299, 312, 332, **333**
eggs, 299, 310, **311**, 312, 314, **315**, 337,
340

Paragordius species, 384, 388

Parasitosis, delusional, 386-387

Peach fuzz
in fecal specimen, 384, 402, **403**

- Pediculus*
humanus capitis, 380, **381**
humanus humanus, 380, **381**
- Pentatrichomonas hominis*
 general description, 9, 92-93
 trophozoites, 7, 22, 94, **95**
- Perianal skin examination, 443-444
- Periodicity, of microfilariae, 187
- Personnel, proficiency of, 479-480
- Phaneropsolus bonnei*
 general description, 298, 300-301
 eggs, 300, 302, **303**
- Phosphate buffer solutions for Giemsa stain, 454
- Phthirus pubis*
 general description, 380, **381**
- Physaloptera* species
 general description, 182
 eggs, 238, **239**
caucasica, 238
- Pineapple crystals
 in fecal specimen, 384
- Pinworm, see *Enterobius vermicularis*
- Plant cells/material
 in fecal specimen, 179, 182, 384, 388, **389**, 390,
391, 392, **393**
- Plasmodium*
falciparum, 12-17, 14, 134, 148
 displaced forms, 144, **145**
 gametocytes, 15, 134, **135**, 144, **145**
 schizonts, 15, 134, **135**
 thick blood films, 16-17, 146, **147**
 thin blood films, 14-15, 134, **135**, 408
 trophozoites, 14, 16, 134, **135**
malariae, 14, 137, 141
 gametocytes, 15, 17, 138, **139**
 schizonts, 15, 17, 138, **139**
 thick blood films, 16-17, 146, **147**
 thin blood films, 14-15, 138, **139**
 trophozoites, 14, 16, 138, **139**
ovale, 14, 133, 141
 gametocytes, 15, 142, **143**
 schizonts, 15, 17, 142, **143**
 thick blood films, 16-17, 146, **147**
 thin blood films, 14, 15, 142, **143**
 trophozoites, 14, 16, 142, **143**
vivax, 14, 129, 133, 141
 gametocytes, 15, 17, 130, **131**, 144, **145**
 schizonts, 15, 17, 130, **131**
 thick blood films, 16-17, 146, **147**
 thin blood films, 14-15, 130, **131**, 408
 trophozoites, 14, 16, 130, **131**, 144, **145**
- Platelets
 in blood smear, 386, 408, **409**, 412, **413**
- Platyhelminthes, 172
- Pleistophora* species
 general description, 19, 21
- Pneumocystis*
carinii,
 general description, 19, 166-167
 cysts, 168, **169**
 trophozoites, 168, **169**
jiroveci, 167
 f.sp. *hominis*, 167
- Pollen grain
 in fecal specimen, 392, **393**, 394, **395**, 396, **397**,
 402, **403**, 406, **407**
- Polymorphonuclear leukocytes
 in fecal smear, 384, 385, 386
- Polyvinyl alcohol, see PVA
- Preparation of parasites for study, 466-474
- Preservation methods (see fixation methods)
- Proglottids
- Taenia*
saginata, 335, 342-343, 344, **345**, 347, 348, **349**
solium, 335, 342-343, 344, **345**, 347, 348
- Promastigotes,
Leishmania species, 158, **159**
- Prosthodendrium molenkampi*
 general description, 298, 300-301
 eggs, 300, 302, **303**
- Protozoa classification,
 cytoplasm, 2
 diagnosis of infections, 22-25
 intestinal, 2-6
 motility, 2
 nuclei, 2, 3
 size, 2
- Pseudoparasites, 384-411, 385
- Pseudoterranova decipiens*
 general description, 182, 248
 larvae, 248-250, 251
- Psorospermium haeckelii*
 in fecal specimen, 384-385, 392, **393**

Psyllium cast
in fecal specimen, 388, **389**

PVA procedures, 421-423

Pygidiopsis summa

general description, 298, 300-301
adult worms, 332, **333**
eggs, 300, 302, **303**

Q

Quality control in laboratory, 479-482

R

Relaxation of parasites, methods, 479-482

Retortamonas intestinalis

general description, 9, 92-93
cysts, 8, 24, 94, **95**
trophozoites, 7, 22, 94, **95**

Rhodnius species, 162

Rosebud, 538

S

Sarcocystis

cruzi

general description, 13, 114-115
oocysts, 25, 116, **117**

hominis, 114

suihominis, 114

Sarcomastigophora, 2

Sarcophaga species

general description, 374

Sarcoptes scabiei

general description, 374-376, **377**

Schaudinn fixative, 422

Schistosoma

bovis, 298, 321-322

eggs, 322, **323**

haematobium, 298, 299, 321-322, 390

eggs, 299, 321-322, **323**

intercalatum, 298, 321

eggs, 322, **323**

japonicum, 298, 299, 325

adult worms, 299, 325, 332, **333**

eggs, 299, 325-326, **327**

mansoni, 298, 299, 317, 390

eggs, 299, 317-318, **319**

mekongi, 298, 325

eggs, 299, 325-326, **327**

Schizonts

Plasmodium

falciparum, 134, **135**

malariae, 138, **139**

ovale, 142, **143**

vivax, 130, **131**

Schneider *Drosophila* culture medium, 474-475

Schneider Acetocarmine stain, 475-476

Schüffner stippling or dots, 14-17, 129-130, **131**,
141-142, **143**

Septata intestinalis. See *Encephalitozoon intestinalis*

Sheather sugar flotation technique, 421

Shigella species, 404, **405**

Sigmoidoscopy material, 446-447

Simulium species, 279

Skin ulcer specimen examination, 448

Small intestine specimen examination, 445-446

Sparganum, 337, 370, **371**

Sphaerita, 46, **47**

Spirometra mansonioides

eggs, 337, 340, **341**

Spleen specimen examination, 448

Spores

Encephalitozoon

bellem, 126, **127**

cuniculi, 126, **127**

intestinalis, 126, **127**

Enterocytozoon bieneusi,

in fecal specimen, 126, **127**

Sputum examination, 444-445

Squamous epithelial cells, 384-386

in fecal smear, **385**, 404, **405**

Stains

acetocarmine, 475-476

acid-fast, 428-432

Field, 455-456

Giemsa, 453-456

hematoxylin

Delafield, 456-457

iron, 427-429

trichrome, 424-427

Starch cells

in fecal specimen, 390, **391**

Starch granules, 385

Stellantchasmus falcatus, 301

Stomach specimen examination, 447-448

- Strongyloides*
fuelleborni, 227
stercoralis
 general description, 179, 180-181, 217, 222, 226, 228, 400
 adult worms, 180-181, 226, 228, 229
 larvae, 179, 180, 184, 185, 222, 223, 226, 230, 231, 402
- Study material, 470-477
- T**
- Tachyzoites
Toxoplasma gondii, 120, 121
- Taenia*
multiceps, 370, 371
saginata, 172, 173, 334, 335, 342, 347
 adult worms, 334, 335, 342-344, 345, 347
 eggs, 334, 335, 342, 347-348, 349, 362, 364
 proglottids, 334, 335, 344, 345, 347-348, 349
saginata asiatica, 342-343
solium, 334, 342, 347, 370, 371
 adult worms, 334, 335, 342-344, 345, 347
 eggs, 334, 335, 342, 347-348, 349, 362, 364
 proglottids, 334, 335, 344, 345, 347-348, 349
solium cysticerci, 343
- Tapeworms, see Cestodes
- Tapeworms, scoleces, search for, 437
- Ternidens deminutus*
 general description, 182, 184, 185, 236-237
 adult worms, 224, 225
 eggs, 238, 239
 larvae, 184, 185, 236
- Theileria equi* (= *Babesia. equi*), 148-149
 stages in thin blood films, 150, 151
- Tick, 374, 380, 381
- Tomato skin
 in fecal specimen, 384
- Toxascaris leonina*
 general description, 242-244
 eggs, 244, 245
- Toxocara*
canis, 182, 242, 392, 393
 eggs, 179, 244, 245, 246, 247
cati, 182, 242, 244
 eggs, 179, 244, 245, 246, 247
- Toxoplasma gondii*
 general description, 20, 118-119
 oocysts, 18, 120, 121
 tachyzoites, 120, 121
- Trachipleistophora hominis*
 general description, 19, 21, 123-125
- Trematodes (see also specific organisms)
 Fixation and study of, 475-476
 general description, 298, 299
- Triatomid, 162, 375-376, 377
- Trichinella*
britovi, 232
murrelli, 232
nativa, 232
nelsoni, 232
papuae, 232
pseudospiralis, 232-233, 232
 larvae, 232, 234, 235
spiralis, 232
 adult worms, 232, 234, 235
 larvae, 179, 232
zimbabwensis, 232
- Trichomonas*
vaginalis
 general description, 9, 92-93
 trophozoites, 7, 94, 95
tenax, 9
- Trichostrongylus* species
 general description, 179, 184, 185, 213, 396
 adult worms, 213
 eggs, 179, 213-214, 215
 larvae, 184, 185
axei, 210
colubriformis, 210
orientalis, 210
- Trichrome stain,
 procedures, 424-427
 stained organisms, 29, 31, 35, 41, 47, 51, 55, 59, 65, 71, 79, 83, 89, 95, 99, 101, 105, 127, 207
- Trichuris*
trichiura, 203, 240
 adult worms, 203, 203, 204, 205
 eggs, 172, 179, 203, 204, 205, 206, 207, 390, 391

- vulpis*
eggs, 179, 203, 204, **205**, 206, **207**
- Trophozoites
Acanthamoeba species, 74, **75**
Balantidium coli, 98, **99**
Chilomastix mesnili, 88, **89**, 90, **91**, 100, **101**
Dientamoeba fragilis, 78, **79**, 100, **101**
Endolimax nana, 58, **59**, 60, **61**, 100, **101**
Entamoeba
coli, 46, **47**, 100, **101**
dispar, 28, **29**, 30, **31**, 36, **37**, 100, **101**
gingivalis, 36, **37**
hartmanni, 40, **41**, 42, **43**, 100, **101**
histolytica, 28, **29**, 30, **31**, 36, **37**, 100, **101**
polecki, 54, **55**
Enteromonas hominis, 94, **95**
Giardia duodenalis, 82, **83**, 84, **85**, 100, **101**
Iodamoeba buetschlii, 64, **65**, 66, **67**, 100, **101**
Naegleria fowleri, 70, **71**
Pentatrichomonas hominis, 94, **95**
Plasmodium
falciparum, 134, **135**
malariae, 138, **139**
ovale, 142, **143**
vivax, 130, **131**, 144, **145**
Pneumocystis carinii, 168, **169**
Retortamonas intestinalis, 94, **95**
Trichomonas vaginalis, 94, **95**
- Truffle spore
in fecal specimen, 392, **393**
- Trypanosoma*
brucei gambiense, 10, 11, 161-163
morphologic stages, 161
trypomastigotes, 164, **165**
brucei rhodesiense, 10, 11, 161-163
morphologic stages, 161
cruzi, 10, 11, 161-163, 375
epimastigotes, 164, **165**
morphologic stages, 161
trypomastigotes, 164, **165**
evansi, 163
rangeli, 10, 11, 161-163, 375
morphologic stages, 161
trypomastigotes, 164, **165**
- Trypomastigotes,
Trypanosoma brucei gambiense, 11, 164, **165**
Trypanosoma brucei rhodesiense, 11, 164, **165**
Trypanosoma cruzi, 11, 164, **165**
Trypanosoma rangeli, 11, 164, **165**
- Turbatrix aceti*
in fecal specimen, 400, **401**
- U**
Urogenital specimen examination, 449-450
- V**
Vahlkampfia, 73
Vegetable spiral
in fecal specimen, 390, **391**
Vinegar eel, 400, **401**
Vittaforma corneae
general description, 19, 21, 123
- W**
Washings
wormlike artifacts, 384-386, 388, **389**, 400, **401**
Weber stain for microsporidia, 432-433
Woblfabrtia species
general description, 374
larvae, 378, **379**
Wuchereria bancrofti
general description, 183, 186, 188, 252-253,
259, 265, 269
microfilariae, 183, 186, 188, 254, **255**, 256, **257**,
260, 266, **267**, 280, **281**
- X**
Xenopsylla cheopis
general description, 374
- Y**
Yeasts,
in fecal specimen, 104, **105**, 384-386, 385
- Z**
Zinc sulfate flotation, 419-421
“Ziploc bag” syndrome, 386