

## Index

Page numbers **in bold** indicate passages covering a parasite or a topic in depth  
Words **in bold** indicate important taxa or topics

### a

- Abortion 106, 179, 181, 189
- Acanthamoeba* 74, 108, 115–116
- Acanthocephala 288**
  - development 289
  - morphology 291
  - pathology 293
- Acanthocephalus anguillae* 291
- Acanthocephalus lucii* 291
- Acanthocheilonema viteae* 66, 68, 326, 334
- Acanthoparyphium* 84, 85
- Acanthorhynchus* 26
- acanthella, acanthor 290
- acanthopodia 107
- Acari 344**
  - classification 345
  - morphology 346
  - development 347
- acetabulum 234
- Achatina fulica* 312
- acquired immune responses 62
- actinopilin 345, 361
- Actinotrichida 361**
- adaptive immunity 62**
- adenotrophic vivipary 419
- Aedes* 210, 327, 334, 397, 400
- Aedes aegypti* 395, 396, 399, 400
- Aedes africanus* 396
- Aedes albopictus* 395, 399, 400
- Aedes scutellaris* 395
- Aedes tritaeniorhynchus* 399
- aesculapean staff 322
- African Horse Sickness Virus* 393
- African Swine Fever 358
- aggregated distribution 30, 43
- African Tick Typhus 357
- ala, cervical or caudal 297
- Alaria* 233
- Alces alces* 410
- aleppo boil 148
- alimentary infection 16
- alleles 42
  - changes in frequencies 43, 44
  - rare 45
  - selection of 43
- allergic diseases 74
- alteration of the host 78**
  - host cells 78
  - hormonal system 79
  - behavior 82
- alveolar echinococcosis 286
- Alveolata 153**
  - schematic representation of surface 154
- amastigote 118
- Amblycera 371, 374, 376
- Amblyomma* 354
- Amblyomma americanum* 357, 360, 361
- Amblyomma cajennense* 357
- Amblyomma hebraeum* 357, 360
- Amblyomma maculatum* 359
- Amblyomma variegatum* 357
- amoebapore 112
- Amoeba proteus* 108
- amoebae 107
- amoebiosis 110
- Amoebozoa 107**
  - amoebulae 108
- amphid 299, 306
- Anactinotrichida 347, 351**

- Anaplasma phagocytophilum* 361  
 anaplasmosis 361  
*Ancylostoma braziliense* 311  
*Ancylostoma caninum* 311  
*Ancylostoma ceylanicum* 311  
*Ancylostoma duodenale* 3, 16, 295, **308**  
 – development 308  
 – morphology 309  
 – genome 309  
 – pathology 309  
 – epidemiology 309  
*Ancylostoma tubaeforme* 311  
 Ancylostomatidae 310  
 antibody dependent cellular cytotoxicity (ADCC) 65  
*Anelasma squalicola* 24  
*Angiostrongylus cantonensis* 311–312  
*Anguilla anguilla* 36, 37  
*Anguilla japonica* 36  
*Anguilla rostrata* 36  
*Anguillicola crassus* 37  
*Anisakis* 296, 297, **320**  
*Anisakis pegreffii* 321  
*Anisakis physeteris* 321  
*Anisakis simplex* 320–321  
*Anisakis typica* 321  
*Anodonta cygnea* 26  
 Anoplocephalidae 273, 361  
*Anopheles* 83, 191, 193, 196, 199, 200, 210, 327, 334, 395, 396, 397, 398  
*Anopheles arabiensis* 395  
*Anopheles bwambae* 395  
*Anopheles culicifacies* 395  
*Anopheles darlingi* 395  
*Anopheles dirus* 395  
*Anopheles durenii* 399  
*Anopheles funestus* 399  
*Anopheles gambiae* 21, 395, 399  
*Anopheles maculatus* 395  
*Anopheles maculipennis* 395  
*Anopheles melas* 395, 399  
*Anopheles merus* 395  
*Anopheles punctulatus* 395  
*Anopheles quadriannulatus* 395  
*Anopheles stephensi* 199, 399  
 Anophelinae 394  
 Anoplura 371, 375  
 antigen disguise 70, 246  
 antigenic variation 71, 101, 124, 128, 131, 133, 204, 213  
 antagonism 6, 38  
 antimicrobial peptides 342  
*Aotus* 12  
 apical complex 154, 159, **160**, 190  
 apical organ 242  
**Apicomplexa 155**  
 – cell biology 160  
 – development 155  
 – host cell invasion 163  
 – gliding motility 162  
 – life cycle 156  
 – morphology 157  
 – ultrastructure 159  
 apicoplast 154, 156, 160, 162, 194  
*Apis cerana* 35, 348  
*Apis mellifera* 35, 348  
 Apterygota 371  
 arbovirus 342, 359  
*Argas* 345, 358  
*Argas persicus* 358  
*Argas reflexus* 358  
 Argasidae 358, 352, 358  
*Argulus* 25, 367  
*Argulus appendiculosus* 367  
*Argulus foliaceus* 26, 367–368  
*Argulus japonicus* 367  
 arms race 22, 185  
*Armadillidium vulgare* 289, 291  
**Arthropoda 337**  
 – impact of bloodfeeding 343  
 – phylogeny 339, 340  
 – transmission 341  
 – vector concepts 340  
 – vectorial capacity 342  
 ascariasis 317  
*Ascaris* 26, 296, 298, 318  
*Ascaris lumbricoides* 3, 11, 295, **315**  
 – development 316  
 – epidemiology 316  
 – life cycle 317  
 – morphology 316  
 – pathology 317  
*Ascaris suum* **318**  
*Asellus aquaticus* 292  
 asexual reproduction 29  
 assassin bugs 380  
**Astigmata 364**  
*Auchmeromyia senegalensis* 413  
 Australian sheep blowfly 413  
*Austrobilharzia* 247  
*Austroconops* 392  
*Austrovenus stutchburyi* 84  
 autoinfection 15, 307, 324  
 axostyl 103  
*Azygia* 233

**b**

*Babesia* 155, **211**, 216, 404  
 – babesiosis 213, 361  
 – development and morphology 211  
 – life cycle 212  
 – immunobiology 215  
*Babesia bigemina* 215  
*Babesia bovis* 21, 161, 214, 215, 354  
*Babesia canis* 215  
*Babesia divergens* 211, 212–213, 214, 215  
*Babesia major* 215  
*Babesia microti* 214, 215, 361  
*Babesia motasi* 215  
*Babesia ovis* 215  
 Babesiidae 156, 210  
 babesiosis 214  
 Bacillary Angiomatosis 389  
*Bacillus anthracis* 410  
*Bacillus subtilis* 21  
*Bacillus thuringiensis israelensis* 400, 404  
 bacterial symbionts 326, 374, 375, 418  
 balantidiosis 219  
*Balantidium coli* 74, 219  
 – development and morphology 219  
 barber's pole worm 312  
*Bartonella bacilliformis* 407  
*Bartonella henselae* 389  
*Bartonella quintana* 379  
 basophil 61  
 bat flies 418  
 beef measles 277  
 beef tapeworm 281  
 behavioral changes 87  
 benzimidazoles 44, 315, 330  
*Bilharziella* 247  
 bilharziosis 238  
 biological vectors 341  
*Biomphalaria* 239, 241  
*Biomphalaria glabrata* 80, 240  
*Bithynia leachi* 254, 255  
 biting rate 342  
 black flies **330**, 400; *see* Simuliidae 400  
 blowflies 413  
*Bluetongue Virus* 393  
*Boophilus* 355, 359  
*Boophilus microplus* 354  
 Boutonneuse Fever 360  
*Borrelia* 341, 356, 359, 360  
*Borrelia anserina* 358  
*Borrelia burgdorferi* 360, 410  
*Borrelia duttoni* 360, 380  
*Borrelia hermsii* 360  
*Borrelia lonestari* 360  
*Borrelia parkeri* 360

*Borrelia recurrentis* 379  
*Borrelia turicatae* 360  
 bot flies 413  
 bottle jaw syndrome 253  
*Bovicola bovis* 375, 376  
 Bovine Ephemeral Fever 394  
**Brachycera** 390, **408**  
*Brachylecithum mosquensis* 91  
*Bradylops tridactylus* 394  
 bradyzoites 176, 187  
 brain worm 90, 260  
 Broad Fish Tapeworm 269  
 brood parasitism 7, 8  
 Brown Dog Tick 357  
*Brugia malayi* 21, 325, **326**, 334, 400  
 – development 327  
 – genome 328  
 – pathology 329  
 – life cycle 327  
 – morphology 328  
*Brugia timori* 325  
 book lungs 339  
 bug 380; *see* Heteroptera 380  
 buffalo gnat 401  
*Bulinus* 239  
*Bulinus truncatus* 241  
 bursa copulatrix 299, 308

**c**

*Caenorhabditis elegans* 21, 244, 294, 314  
 Calabar swelling 334  
*Callithrix* 394  
**Calliphoridae** 391, **413**  
*Calliphora cuprina* 412  
*Calodium hepaticum* 300  
*Camponotus* 89, 90, 91  
*Capillaria* 299  
*Capillaria aerophila* 295  
*Capillaria hepatica* 300  
 capillary feeder 373  
 capitulum 350, 355  
*Carasobarbus canis* 389  
*Carcinus maenas* 23, 34, 35, 368  
 Carrion's disease 407  
 castor bean tick 355  
 cat avoidance behavior 177  
 cat fleas 387  
 cat flea typhus 389  
 cat liver fluke 254  
 cat scratch disease 389  
 cataract 250  
 cement 353  
*Centrorhynchus* 290  
 cephalothorax 367

- Cephenomyia* 26  
*Ceratophyllus gallinae* 30, 31, 386  
**Ceratopogonidae** 391  
 – biology 392  
 – disease transmission 393  
 – morphology 392  
 cercaria 231, 232, 234, 242  
 cercarial dermatitis 247  
 cercomer 266  
*Cervus canadensis* 410  
**Cestoda** 263  
 – adult 267  
 – development 265  
 – evolution and origin of life cycles  
 – formation of genital organs 268  
 – genome 269  
 – morphology 266  
 – strobila 267  
 – tegument 268  
 CD36 203  
**changing of host behavior** 82  
 Chagas disease 134, 136, 380  
 chagoma 136  
 chewing lice 375,  
 chicleros's disease 151  
 cinchona bark 198  
 cirrus 229, 237  
 chelicerae 346, 351  
 chiggers 363, 388  
 chigoe 388  
 Chikungunya 399  
 Cirripedia 368  
 chitin 339  
 chloroquine 47, 195  
*Chorioptes bovis* 364  
 chorioretinitis 180  
**Chromadorea** 294, 296, 306  
 chromatin diminution 318  
*Chrysomya* 413  
*Chrysops* 334, 408, 409, 410  
*Chrysops dimidiata* 334, 410  
*Chrysops silacea* 334, 410  
*Chthamalus stellatus* 24  
**Ciliophora** 154, 218  
*Cimex columbarius* 384  
*Cimex hemipterus* 384  
*Cimex lectularius* 381, 283  
*Cimex lectularius* 382, 383–384  
 Cimicidae 371, 382  
*Cinchona officinalis* 197  
 clasping organs 26  
 cleg 408  
*Clonorchis sinensis* 256  
 clown fish 5  
**Coccidia** 156, 165  
 coccidiosis 172  
*Cochlicopa lubrica* 259  
*Cochliomyia* 413  
*Cochliomyia hominivorax* 413  
 coenurus 85  
**coevolution** 18, 38, 41, 45  
 common liver fluke 251  
 cospeciation 40, 41  
*Colpocephalum* 14  
*Columbicola columbae* 375, 376  
 commensalism 6  
 concomitant immunity 13, 21, 59, 246  
 congenital infection 17, 180  
 congenital toxoplasmosis 180  
 conoid 154, 155, 160  
*Cooperia* 312  
*Coquillettidia* 327  
 coracidium 265, 269  
*Coronula diadema* 24  
*Corynosoma* 290  
*Corynosoma constrictum* 87, 88  
 Corridor Fever 215  
 costa 103  
 Covering Sickness 133  
*Coxiella burneti* 361  
 crab louse 378  
 creeping eruption 311  
*Crithidia* 118  
 Crimean-Congo Hemorrhagic Fever = CCHF  
 359  
 crowding effect 19, 59, 266  
**Crustacea** 366  
 cryptosporidiosis 167, 169  
*Cryptosporidium baileyi* 169  
*Cryptosporidium meleagridis* 169  
*Cryptosporidium muris* 169  
*Cryptosporidium nesorum* 169  
*Cryptosporidium parvum* 13, 16, 21, 73, 160,  
 161, 166  
 – cell biology 166  
 – cryptosporidiosis 167, 169  
 – life cycle 167  
 – ultrastructure 168  
*Cryptosporidium serpentis* 169  
 CSP = circumsporozoite protein 206  
 ctenidium 385  
*Ctenocephalides* 387  
*Ctenocephalides canis* 387, 389  
*Ctenocephalides felis* 384, 386, 387  
*Ctenodactylus gundi* 176  
 cuckoo 8  
*Culex* 210, 327, 334, 396, 397, 398, 399, 400  
*Culex pipiens* 395

- Culex quinquefasciatus* 395, 396
- Culicidae** 391, 394
- biology and development 395
  - control 400
  - disease transmission 398
  - medical importance 394
  - morphology 396
  - species complexes 389, 395
- Culicinae 394
- Culicoides* 392, 393
- Culicoides adersi* 394
- Culicoides arakawae* 394
- Culicoides arboricola* 393
- Culicoides biguttatus* 393
- Culicoides downesi* 394
- Culicoides furens* 394
- Culicoides grahami* 394
- Culicoides imicola* 393
- Culicoides milnei* 394
- Culicoides nipponensis* 394
- Culicoides obsoletus* 393
- Culicoides oxystoma* 394
- Culicoides paraensis* 394
- Culicoides pulicaris* 393
- Culicoides stellifer* 393
- Curtutera australis* 84
- cutaneous leishmaniosis 148, 406
- Cutebrinae 414
- cuticle 297
- Ctenodactylus gundi* 176
- Cyclophyllidea 272
- Cyclops* 269, 367
- Cyclospora cayetanensis* 73, 175
- cypris larva 368
- cysticercosis 282
- Cysticercus ocularis* 282
- cystacanth 86, 290
- cystozoites 188
- cyst-forming coccidia 165
- cystic echinococcosis 283
- cysticercoid, cysticercus 271
- cytokines 60, 71
- cytotoxic T cells 64
- cytomeres 157, 217
- d**
- daughter sporocyst 231, 232
- delayed hypersensitivity 388
- Demodex* 345, 362
- Demodex brevis* 74, 362
- Demodex canis* 362
- Demodex folliculorum* 23, 30, 74, 362
- dendritic cells 60
- Dengue 342, 399
- dense granules 154, 155, 160
- Dermacentor* 354, 355, 356, 360
- Dermacentor andersoni* 356, 359, 361
- Dermacentor marginatus* 356
- Dermacentor occidentalis* 359
- Dermacentor reticulatus* 356, 361
- Dermacentor variabilis* 356, 359, 361
- Dermanyssus* 345
- Dermanyssus gallinae* 348
- Dermataphagoides* 364
- Dermatobia hominis* 414
- Diaptomus* 269
- Dicrocoelium* 233, 234
- Dicrocoelium dendriticum* 11, 22, 89, 90, 91, 235, 237, 259, 295
- development 259
  - epidemiology 261
  - life cycle 260
  - morphology 261
  - pathology 262
- Dicrocoelium hospes* 89, 90, 261
- Dictyocaulus viviparus* 295, 315
- diethylcarbamazine 330
- Digenea** 230
- adults 234
  - developmental stages 232
  - genital organs 236
  - life cycle 231
  - morphology 232
  - systematics and evolutionary history 237
- dinoflagellates 153
- Diectophyme renale* 25, 297
- Dipetalogaster maximus* 136
- Dipetalonema* 419
- Diphyllobothriidea** 269
- Diphyllobothrium* 267, 367
- Diphyllobothrium latum* 25, 27, 265, 269
- epidemiology 271
  - life cycle 271
  - morphology 271
  - pathology 271
- Diplomonadida** 99
- Diplostomida 237
- Diplostomum spathaceum* 234, 235, 237, 248, 250
- development 248
  - life cycle 250
  - morphology 249
  - pathology 250
- Diptera** 371, 390
- Dipylidium caninum* 341, 375, 387, 389
- disability adjusted life years (DALYs) 15
- Dirofilaria immitis* 334, 400
- Dirofilaria repens* 400

- Dirofilaria ursi* 404  
 dog fleas 387  
 dourine 133  
**Dorylaimea** 294, 296, 300  
 dracunculiosis 322  
*Dracunculus medinensis* 25, 296, **321**, 367  
*Draschia* 412  
*Draschia megastoma* 412  
 drug resistance 43, 44  
*Duddingtonia flagrans* 315  
 dwarf males 27  
 dwarf tapeworm 275
- e**
- East Coast Fever 215, 357, 361  
 ecdysis 295, 339  
*Echinococcus* 267, 269, 277, **283**, 285  
*Echinococcus canadensis* 284  
*Echinococcus equinus* 284  
*Echinococcus felidis* 284  
*Echinococcus granulosus* 84, 269, **283**, 284, 285  
*Echinococcus multilocularis* 16, 29, 84, 269, 284, **285**, 287  
*Echinococcus oligarthrus* 284, 286  
*Echinococcus ortleppi* 284  
*Echinococcus vogeli* 284, 286  
*Echinorhynchus truttae* 291  
 ectoparasite 10, 31  
 ectopic infection 257  
 eel 37  
 egg raft 397  
*Ehrlichia* 361  
*Ehrlichia chaffeensis* 361  
*Ehrlichia ewingii* 361  
*Eimeria* 155, 165, **169**  
 – cell and immunobiology 174  
 – coccidiosis 172  
 – development 169  
 – genome 172  
 – life cycle 170  
 – morphology 170  
*Eimeria acervulina* 173  
*Eimeria arloingi* 173  
*Eimeria bakuensis* 173  
*Eimeria bovis* 173, **175**  
*Eimeria deblickei* 173  
*Eimeria falciformis* 171, 172  
*Eimeria mivati* 173  
*Eimeria necatrix* 173  
*Eimeria stiedai* 173  
*Eimeria tenella* 170, 171, 173, **174**  
*Eimeria truncata* 173  
*Eimeria vermiformis* 53, 54  
*Eimeria zuernii* 173  
 Eimeriidae 156  
*Elephora schneideri* 410  
 elephant skin 333  
 elephantiasis 326  
*Encephalitozoon cuniculi* 21  
 Endemic Typhus 389  
 endodyogeny 157, 187, 189  
*Endolimax nana* 115  
 endoparasites 10  
 endopeptidase 140  
 endopolygeny 157, 188  
*Entamoeba* 108  
*Entamoeba coli* 114  
*Entamoeba dispar* 108, 111, 112, 114  
*Entamoeba gingivalis* 114  
*Entamoeba hartmanni* 114  
*Entamoeba histolytica* 3, 15, 21, 74, **108**  
 – amoebiosis 110  
 – cell and immune biology 111  
 – colitis 110  
 – genome 111  
 – life cycle 109  
 – liver abscesses 111  
 – tissue invasion 112, 113  
*Entamoeba invadens* 115  
*Entamoeba moshkovskii* 114  
*Entamoeba polecki* 114  
*Entamoeba proteus* 98  
*Enterobius vermicularis* 3, 15, 295, **323**  
 – development 323  
 – epidemiology 324  
 – morphology 324  
 – pathology, treatment 324  
 eosinophil 61, 66, 227, 244, 247 305  
*Ephemerovirus* 394  
 epimastigote 118  
 Epidemic Typhus 379  
 epidemiology 17, 343  
*Epizootic Hemorrhagic Disease Virus* = EHD 393  
 epizootiology 17  
 Equine Infectious Anemia 411  
 erythrocytic schizogony 191  
*Escherichia coli* 19, 21  
*Esox lucius* 271  
 Espundia 151  
*Esthiopterum raphidium* 14  
 Eucestoda 263  
**Euglenozoa** 117  
 – cell biology and genome 118  
 – phylogeny 121  
 eukaryotes, phylogenetic tree 97

eukaryotic parasites 4  
*Eulimdana* 375  
 eutely 297  
 evasion mechanism 58, 69, 75  
 evolutionary race 22, 185  
 excessive inflammatory reactions 67  
 exflagellation 191  
 externa 369  
 exoerythrocytic schizogony 191  
 expression site associated genes 130  
 extended phenotype 77  
 eye lens 249

## f

facultative parasites 10  
 Fahrenheit's rule 41  
*Fasciola gigantica* 254  
*Fasciola hepatica* 10, 16, 80, 233, 237, **251**,  
 252, 253, 254, 262, 295  
 – development 251  
 – epidemiology 253  
 – life cycle 252  
 – morphology 251  
 – pathology 253  
 favism 50  
 fecal-oral contamination 16  
*Felicola subrostratus* 375  
 female choice 52  
 feminization of males 81, 369  
*Ferribia* 14  
**Filariæ** **325**  
 – immunobiology 325  
 – *Wolbachia* endobacterial symbionts 326,  
 374  
 filariasis 326, 330, 334, 400  
*Filicollis anatis* 292  
 filopodia 107  
 final host 11  
 fish louse 368  
 fitness 14  
 flagellar pocket 117  
 flagellum 117  
 flame cell 229  
*Flavivirus* 359  
 fleas 384; *see* Siphonaptera 384  
 flea infection 31  
 flies 390; *see* Diptera 390  
 fly belt 416  
 flystrike 413  
*Forcipomyia* 392  
*Formica* 89, 90, 259, 261  
*Formica pratensis* 91  
*Fossaria bulimoides* 251  
*Francisella tularensis* 356, 361, 410

## g

*Galba humilis* 251  
*Galba truncatula* 80, 81, 251, 252, 253  
 gametocyte 157, 194  
 gamogony 155, 157  
*Gammarus lacustris* 87  
*Gammarus pulex* 88  
 Gasterophilinae 414  
*Gasterophilus inermis* 414  
*Gasterophilus intestinalis* 414  
 generalist 38  
 Gené's organ 352  
 genetically attenuated parasites 185  
 genome size 21  
 genu 346  
*Giardia agilis* 99  
*Giardia ardeae* 99  
*Giardia duodenalis* 99  
*Giardia intestinalis* 99  
*Giardia lamblia* 3, 21, 25, **99**  
 – cell and immune biology 101  
 – development and morphology 100  
 – distribution 99  
 – pathogenicity 101  
*Giardia microti* 99  
*Giardia muris* 99, 101  
*Giardia psittaci* 99  
 giardiasis 101  
*Gigantobilharzia* 247  
 gliding motility 162, 181  
*Gliricola porcelli* 375  
*Glossina* 123, 125, 131, 133, **415**, 416, 418  
*Glossina fuscipes* 417  
*Glossina morsitans* 125, 417  
*Glossina palpalis* 417  
*Glossina tachinoides* 417  
**Glossinidae** **123, 391, 415**  
 – control 418  
 – development and biology 416  
 – morphology 417  
 glucose-6-phosphate-dehydrogenase 49  
 glycosylphosphatidylinositol = GPI 143  
 glycoposphoinositol lipid = GIPL 143  
 glycosome 119  
 gnathosoma 346, 348  
 good-genes model 53  
 gordian worm 92  
 gordian knot 92  
 GP63 = glycoprotein 63 105, 139, 143, 145  
 GRA15 = dense granule protein 15 185  
 Granulomatous Amoebic Encephalitis = GAE  
 116  
 great tit 30, 31  
 green bottle 413

- guide RNAs 121  
*Grammomys surdaster* 210  
 Guinea worm 321  
*Gymnocephalus cernuus* 271  
 gynecophoric channel 242, 244  
*Gyrodactylus elegans* 26
- h**
- habitat preference 92  
*Habronema microstoma* 412  
*Habronema muscae* 412  
*Haemaphysalis* 354, 360  
*Haematobia* 411  
*Haematobia irritans* 411, 412  
*Haematobosca* 411  
*Haematopinus setosus* 379  
*Haematopinus suis* 379  
*Haematopota* 408  
**Haematozoa** 156, 190  
*Haemogogus* 399  
*Haemonchus* 296  
*Haemonchus contortus* 21, 295, **312**  
 – development 312  
 – denome 314  
 – morphology 314  
 – pathology 315  
 Haemosporida 156  
 hair worm 92, 300  
 Haller's organ 352, 355  
 halteres 390  
 handicap principle 52  
 hanging groin 333  
*Hantavirus* 21  
 haplont 155  
 Harara 407  
 harvest mite 363  
 hatchet cell 417  
 heart worm 334  
 Heartwater Fever 357  
*Helicella* 259  
*Helicobacter pylori* 21  
*Heligmosomoides polygyrus* 53, 54  
 helminth 226  
 Hemiptera 380  
 hemoglobin C 49  
 hemolytic anemia 50  
*Hemoproteus* 419  
 hemimetabolous 370  
 hemozoin 195  
 hepatosplenomegalie 149, 201, 245  
*Hepaticystis kochi* 394  
 hermaphroditism 28  
*Herpes simplex* 21  
**Heteroptera** – True Bugs **380**
- heteroxenous 10  
 hexacanth larva 265  
**Hexapoda** **370**  
 Hippoboscidae 391, 415, 418  
 histiotropic phase 312  
 hit-and-run strategy 19  
 holometabolous 370  
 honest signals 53  
 honey bee 35  
 hookworm 308  
 horizontal transmission 17  
 horse flies 408; *see* Tabanidae 408  
 host 2, **11**  
 – final 11  
 – intermediate 12  
 – paratenic 12  
 – range 13  
 – resistance 12  
 – reservoir 12  
 – specificity 13  
 host cell invasion 139, 146, 150, 303  
 host switch 40, 41  
 house and stable flies 410; *see* Muscidae 410  
 humoral immune response 64  
*Hyalomma* 355, 359, 360  
*Hybomitra* 408, 410  
 Hydatid worm 283  
*Hydatigera* 277  
*Hydatigera taeniaeformis* 264, 277, 278, 279, **283**  
 hydrocephalus 179  
 hydrogenosomes 103  
 hydroxylapatit 254  
*Hydrotaea irritans* 411  
 hygiene hypothesis 74  
 Hymenolepididae 274  
*Hymenolepis diminuta* 274  
*Hymenolepis microstoma* 269  
*Hymenolepis nana* 275; *see* *Rodentolepis nana* 275  
 hyperparasitism 7  
 hypnozoites 191, 198, 200  
 hypobiosis 312  
 hypopharynx 372  
 hypopus 364  
 hypostome 346, 351, 355  
*Hypoderma* 415  
*Hypoderma bovis* 414, 415  
*Hypoderma lineatum* 414, 415  
 Hypodermatinae 414
- i**
- Ibidoecus bisignatus* 14  
*Ibis falcinellus* 14



*Ichneumon* 9  
*Ichthyophthirius multifiliis* 55–57, 219  
 – life cycle 221  
 idiosoma 346  
 IgE dependent immune attack 65, 75  
 immune complex glomerulonephritis 67  
 immune complexes 67  
 immune evasion 58, 68  
 immunity 13  
 immunological phenotype 71  
**immunobiology** 58  
**immunopathology** 67  
 immunosuppression 68  
 impregnated bednets 396  
 inactivation of effector molecules 73  
 incidence 17  
**increase of transmission** 83  
 incubation period 14  
 induced phagocytosis 140  
 infection 14  
 infestation 227  
 inflammatory diseases 74, 76  
**innate immunity** 60  
 innate lymphoid cells 61  
**Insecta** 370  
 – bloodfeeding and its consequences 373  
 – morphology 372  
 – saliva 374  
 – systematics 371  
 intensity of infection 17  
 intermediate host 12  
 interna 369  
 intracellular parasitism 10  
 intraspecific competitors 39  
 introduced species 34, 36  
*Iodamoeba bütschlii* 115  
 Ischnocera 371, 374, 376  
*Isospora* 175  
*Isospora belli* 173, 175  
*Isospora suis* 173, 175  
 Ivermectin 333  
*Ixodes* 345, 355, 357  
*Ixodes holocyclus* 359  
*Ixodes ovatus* 361  
*Ixodes pacificus* 360  
*Ixodes persulcatus* 351, 356, 359  
*Ixodes ricinus* 211, 351, 354, 355, 356, 359,  
 360, 361, 389  
*Ixodes scapularis* 356, 359, 360, 361  
 Ixodidae 211, 352, 354

**j**  
 Japanese Encephalitis 399  
 jiggers 388

**k**

Kala Azar 150  
 keds 418  
 kentronog 369  
 kentron 369  
 kinete 211, 212  
 kinetoplast 117, 121  
**Kinetoplastea** 117  
 – cell biology and genome 118  
 – phylogeny 121  
 kissing bugs  
 knobs 203, 215  
 Korean Hemorrhagic Fever 348  
 Kupffer stellate cells 195

**l**

labium 372  
 labrum 346  
 lactogenic infection 319  
*Lagopus lagopus scoticus* 32  
 lancet fluke 89  
*Lasiohelea* 392  
 Laurer's canal 236  
 larva 371  
*Larva migrans*, cutaneous or visceral or  
 ocularis 311, 320  
*Legionella pneumophila* 116  
*Leiperia gracilis* 26  
*Leishmania* 3, 13, 64, 68, 69, 73, 83, 118, 121,  
 139, 141, 341, 404, 407  
 – cell and immune biology 143  
 – development 142  
 – immune escape mechanisms 145  
 – leishmaniosis 143, 407  
 – life cycle 141  
 – morphology 143  
 – survival in host cell 146  
 – trojan horse 147  
*Leishmania aethiopica* 144  
*Leishmania amazonensis* 144  
*Leishmania braziliensis* 144, 149, 151  
*Leishmania donovani* 58, 68, 144, 149, 150  
*Leishmania infantum* 144, 150  
*Leishmania major* 21, 119, 142, 144, 147  
*Leishmania mexicana* 142, 144, 149, 151  
*Leishmania tropica* 144, 148, 149, 150, 407  
 leishmanisation 149  
 lemniscus 292  
 leopard skin 333  
*Lepeophtheirus salmonis* 367  
*Leptoconops* 392  
*Leptomonas* 118  
*Leptospira interrogans* 410

- Leptotrombidium* 364  
*Leptotrombidium deliense* 364  
*Leucochloridium paradoxum* 91, 237, **248**,  
 249  
*Leucocytozoon* 394, 404  
*Leucocytozoon caulleryi* 394  
*Leucocytozoon simondi* 404  
*Leucocytozoon smithi* 404  
 life cycle 10  
 life/dinner principle 40  
 lipophosphoglucan = LPG 105, 143,  
 146  
*Lipoptena cervi* 23  
*Litosomoides carinii* 348  
*Litosomoides sigmodontis* **334**  
*Loa loa* 69, 70, 325, 334, 408, 410  
 lobopodia 107  
 loiosis 410  
 lone star tick 357  
 long term strategy 19  
 Lochotrophozoa 228  
 Looping ill 359  
*Lota lota* 271  
 louse 374  
 – disease transmission 379  
 Louse flies 23, 418  
 Louse-borne Relapsing Fever 341, 379  
 Louse-borne Typhus 379  
 lower diptera 390  
*Lucilia cuprina* 413  
*Lucilia sericata* 412, 413  
*Lumbricus terrestris* 316  
 lung fluke 257  
 lungworm 315  
*Lutzomyia* 141, 405, 407  
*Lutzomyia longipalpis* 406  
 Lyme disease 356, 360  
*Lymnaea stagnalis* 80  
 lymphatic filariasis 326  
*Lynchia maura* 23  
*Lystropodia* 419
- m**
- Macaca irus* 210  
*Macracanthorhynchus* 290  
*Macracanthorhynchus hirudinaceus* 291,  
 292  
 macrocyclic lactone 315  
 macroparasite 227  
 macrophage 61, 142  
 MAF1 = mitochondrial association factor 1  
 182  
 maggot 408  
 maggot debridement therapy = MDT 413
- Malaria 46, 190, **196**  
 – cerebral 202, 210  
 – distribution 197  
 – HbS 48  
 – pigment 195  
 – quartana 200  
 – sickle cell anemia 48  
 – severe 202  
 – susceptibility to 50  
 – tertiana 198, 199  
 – tropica 199  
 – vaccine 207  
 male-male competition 52  
**Mallophaga** **375**  
 mandibles 372  
 mange 364  
*Mansonella ozzardi* 325, 394, 404  
*Mansonella perstans* 325, 394  
*Mansonella streptocerca* 70, 325, 394  
*Mansononia* 327, 334, 396, 400  
 mass production of offspring 26  
 mast cells 61  
**mate choice** 51  
 mating lek 406  
 Maurer's clefts 195  
 maxillae 372  
 maxillary palps 373  
 maxicircles 121  
*Meconema thalassinum* 92  
 median bodies 101  
 megacolon 137  
 megasophagus 137  
 Mehlis' gland 236  
 melanesian ovalocytosis 49  
 melanin encapsulation 342  
*Melanoides* 257  
*Melophagus ovinus* 23, 419  
 membranocalix 246  
*Menopon gallinae* 375  
*Menopon plegradis* 14  
 merosome 191  
 merozoite 156, 194  
*Mesocestoides leptothylacus* 272  
**Mesostigmata** **347**, **348**  
 – development 347  
 – morphology 347  
 metacercaria 232  
 metacestode 265, 266  
 metagenesis 11  
**Metamonada** **99**  
 metamorphosis 370  
 methanethiol 396  
 metasoma 292  
**Metastigmata** **350**

- development 353
  - morphology 351
  - tick bites and saliva 353
  - tick borne diseases 359
  - MHC genes 56, 209
  - microcephaly 400
  - microfilaria 325
  - micronemes 154, 160
  - microparasites 227
  - micropore 154, 160
  - micropyle 165, 171
  - microtrich 268
  - Mimivirus* 116
  - minicircles 121
  - mining anemia 311
  - miracidium 230, 232
  - missing the boat 41
  - mite 344, 339
  - mitosome 108, 111
  - molting 295
  - mortality 15
  - Mola mola* 25
  - Moniezia expansa* 273, 295
  - Moniliformis moniliformis* 86, 292
  - Monorchis parvus* 7
  - monoxenous 10
  - morbidity 15
  - mortality 15
  - mosquitoes 394; *see* Culicidae 394
  - mother sporocyst 230, 232
  - mourning attitude 175
  - moving junction 163
  - mucin associated surface proteins 138
  - mucocutaneous leishmaniosis 151, 406
  - mucus ball 259, 261
  - Murine Typhus 389
  - Musca* 340, 411
  - Musca autumnalis* 410, 412
  - Musca domestica* 411
  - Muscidae** 391, 410
    - biology 411
    - disease transmission 411
    - morphology 411
  - Mus musculus* 21
  - mutualism 5, 38
  - Mycobacteria* 148
  - Mycoplasma hominis* 105
  - myiasis 390
  - Myrmeconema neotropicum* 92
  - myxomatosis 341
- n**
- Nagana 121, 131
  - Nairovirus* 359
  - Nasturtium officinale* 253
  - Nairobi Sheep Disease 357
  - natural killer (NK) cells 61
  - nauplius larva 367, 368
  - Necator americanus* 3, 74, 308
    - development 308
    - life cycle 309
    - morphology 309
    - genome 309
    - pathology 309
    - epidemiology 309
  - negative binominal distribution 43
  - Nematoda** 294
    - development 295
    - morphology 298
    - systematics 294, 296
  - Nematodirus* 312
  - Nematocera 390
  - Nematomorpha 92
  - nematophageous fungus 315
  - Neodermata 228
  - neodermis 229, 268
  - Neoechinorhynchus rutili* 291, 292
  - Neoehrlichia mikurensis* 361
  - Neospora caninum* 186–187
  - Neotrombicula* 345
  - Neotrombicula autumnalis* 363
    - life cycle 363
  - neutrophil granulocyte 61, 142
  - nidiculous 347
  - nit 377
  - nitric oxide = NO 148
  - Nosema monorchis* 7
  - nurse cell-parasite complex 302
  - Nuttalliella namaqua* 351
  - Nycteribiidae 391, 418
  - nymph 347, 370
- o**
- O’Nyong-Nyong Fever 399
  - obligate parasites 10
  - Odocoileus hemionus* 410
  - Odocoileus virginianus* 356
  - Oestridae** 391, 413
  - Oestrinae 415
  - Oestrus ovis* 415
  - Onchocerca* 342, 392, 402, 404
  - Onchocerca cervicalis* 332
  - Onchocerca gibsoni* 332
  - Onchocerca gutturosa* 332
  - Onchocerca lienalis* 332
  - Onchocerca ochengi* 332
  - Onchocerca reticulata* 332

- Onchocerca volvulus* 3, 10, 58, 69, 70, 71, 325, **P**  
**330**, 401, 404  
 – control 333  
 – development 330  
 – epidemiology 331  
 – life cycle 331  
 – morphology 330  
 – onchocerciasis control programme 404  
 – pathology 332  
 onchocercoma 330  
 onchodermatitis 333  
*Oncomelania* 239  
*Oncomelania hupensis* 241  
 oncosphere 265, 266  
*Onicola* 292  
*Onobrychis viciifolia* 315  
 oocyst 165  
 ookinete 191  
*Opisthorchis felineus* 234, 235, 237, **254**  
 – development 254  
 – life cycle 255  
 – morphology 255, 256  
 – pathology 256  
*Opisthorchis viverrini* 256  
 opportunistic parasitic infection 13, **72**, 143, 169, 180, 307  
 oral infection 16  
*Orbivirus* 393  
 Oribatidae 273, 361  
*Oriental tsutsugamushi* 364  
 oriental boil 148  
 ornament 51  
*Ornithobilharzia* 247  
*Ornithodoros* 334, 345, 358, 360  
*Ornithodoros hermsi* 358, 360  
*Ornithodoros moubata* 358, 360  
*Ornithodoros moubata moubata* 358  
*Ornithodoros moubata porcinus* 358  
*Ornithodoros parkeri* 358, 360  
*Ornithodoros savignyi* 358  
*Ornithodoros turicata* 358, 360  
*Ornithonyssus* 345  
*Ornithonyssus bacoti* 334, 348  
*Oropouche Virus* **394**  
*Orthobunyavirus* 394  
*Ostertagia* 312  
*Otobius* 358  
*Otobius megnini* 358  
*Otodectes cynotis* 364  
 overdispersed distribution 228  
 oxidative burst 61
- P**  
*Pandoravirus* 116  
*Panstrongylus* 134  
*Panstrongylus megistus* 381  
**Parabasala** **102**  
*Parafilaria bovicola* 412  
*Paragonimus* 3, 233, 234, 259  
*Paragonimus westermani* 235, 237, **257**, 367  
 – development 257  
 – life cycle 258  
 – morphology 258  
 – pathology 259  
*Parahaemoproteus nettionis* 394  
*Paramphistomum* 233  
*Paramphistomum cervi* 237  
*Parascaris equorum* 294  
**Parasite** **2**  
 parasitic castration 80  
 parasitic gigantism 80  
 parasitism 2, 6, 97  
 parasitoidism 8  
 parasitophorous vacuole 134, 140, 163, 191, 196  
 parasitos mask 4  
 parasomal sac 218  
 paratenic host 12, 271, 318, 320  
*Paratenuisentis ambiguus* 291  
 paraxial rod 117  
 parthenogenesis 28  
 paruterine organ 272  
 pathogen associated molecular patterns (PAMPs) 60  
 pattern recognition receptors (PRRs) 60  
*Passalurus ambiguus* 324  
 patency 14  
 pathogenicity 15  
 pathogenicity factor 15  
*Pediculus* 377, 379  
*Pediculus humanus* **377**, 379  
*Pediculus schaeffi* 379  
 pedipalps 346  
 pellicle 153, 218  
*Perca fluviatilis* 271  
 percutaneous infection 16  
 periparturient rise 312  
 peritreme 346  
 peritrophic membrane 124, 342, 374, 406  
 perivascular inflammation 126  
 permanent parasites 10  
 pernicious tapeworm anemia 271  
*Peromyscus* 360  
*Peromyscus leucopus* 356  
 persistence 16, 19  
 PEXEL motif 195

- PfEMP1 protein 202, 203  
 phasmid 299, 306  
**Phlebotominae** 141, 391, 404, 406  
 – control 407  
 – development and biology 405  
 – disease transmission 407  
 – morphology 406  
*Phlebotomus* 141, 405, 406  
*Phlebotomus argentipes* 406, 407  
*Phlebotomus ariasi* 406  
*Phlebotomus papatasi* 406, 407  
*Phlebotomus perfiliewi* 407  
*Phlebotomus perniciosus* 407  
*Phlebotomus sergenti* 149  
*Phlebovirus* 407  
 phoresy 8, 375  
**Phthiraptera** 374, 376  
 phylogeny 97, 153, 227, 339, 340  
*Phytomonas* 118  
 pinworm 323  
 Piroplasmida 156, 210  
 piroplasmosis 211  
*Piscicola geometrica* 26  
 pitworm 311  
*Placentonema gigantissima* 25, 297  
 plague 388  
 Plagiorchiida 237  
*Plagiorhynchus cylindraceus* 86, 289, 291  
 Plasmodiidae 156, 190  
*Plasmodium* 3, 46, 55, 69, 83, 161, 190, 342, 394, 398  
 – cell biology 195  
 – development 190  
 – drug resistance 47  
 – genome 194  
 – life cycle 193  
 – history and significance 196  
 – host resistance 48  
 – human pathogenic species 191  
 – of monkeys, rodents and birds 210  
 – morphology 193  
*Plasmodium berghei* 210, 399  
*Plasmodium chabaudi* 210  
*Plasmodium cynomolgi* 210  
*Plasmodium falciparum* 21, 46, 70, 78, 161, 190–199, 200, 395  
 – antigens 203, 206  
 – antigen variation 203  
 – cytoadherence 202–204, 206  
 – distribution 198  
 – evolution 204  
 – immunobiology 204  
 – life cycle 193  
 – pathology 202  
 – vaccine 205, 207  
*Plasmodium gallinaceum* 210  
*Plasmodium knowlesi* 190, 191, 196, 210  
*Plasmodium malariae* 46, 190–199, 200  
*Plasmodium ovale* 46, 190, 191, 192, 194, 200  
*Plasmodium relictum* 199, 211  
*Plasmodium vinckei* 210  
*Plasmodium vivax* 46, 190–199, 199  
*Plasmodium yoelii* 161, 210  
**Platyhelminths** 228  
 plerocercoid 265,  
*Pneumonyssus simicola* 348  
 Pogonophora 25  
 polar rings 154  
 Polyclenidae 371  
 polyclonal B cell activation 140, 206  
 polycystic echinococcosis 286  
 polymorphism 48, 49, 50  
*Polymorphus marilis* 87, 88  
*Polymorphus minutus* 292  
*Polymorphus paradoxus* 87, 88  
*Polystomum integerrimum* 26  
*Pomphorhynchus laevis* 88, 291, 292  
 pool feeder 373  
 population density 19, 32  
*Porcine Respiratory Syndrome Virus* = PRRSV  
 411  
 pork tapeworm 282  
*Portunion maenada* 35  
*Potamonautes* 402  
 Praziquantel 247  
 preadaption 18  
 precocious strains 174  
 predator-prey relationships 9  
 premunition 13, 21, 59  
 prepatency 14  
 presoma 291  
 pretarsus 346, 348  
 prevalence 17  
 primaquine 210  
 proboscis 373  
 proceroid 265  
 proglottid 264  
 promastigote 118  
*Prosthenorchis* 292  
*Prosthenorchis elegans* 292  
**Prostigmata** 362  
 protandric hermaphrodite 267  
**Protozoa** 95, 97  
 – phylogenetic tree 97  
 pseudopodia 107  
*Pseudosuccinella columella* 251  
*Pseudoterranova decipiens* 321  
*Psilochasmus* 233

- Psoroptes ovis* 364  
*Pthirus pubis* 26, 376, **378**  
*Pulex* 387  
*Pulex irritans* 386, 387  
Pupipara 415  
Pterygota 371  
pupa obtecta, pupa exarata, pupa coarctata 372  
punkies 392
- q**
- Q-fever 361  
quartan malaria 200  
questing 355  
quinolines 195
- r**
- Radix peregra* 248, 250  
rapid expulsion 305  
rat lungworm 311  
*Rattus norvegicus* 311, 388  
*Rattus rattus* 311, 388  
ray bodies 211, 217  
reciprocal selection pressure 39  
Red Grouse, 32  
redia 231, 232  
Red Queen Hypothesis 39  
reactivation of infection 182  
red poultry mite 348  
red ruhr 172, 175  
Reduviidae 371, 380  
reductive evolution 98  
redwater fever 211  
refractile body 171  
reinfection 14  
resilin 385  
reservoir hosts 12  
*Rhipicephalus* 345, 355, 357, 361  
*Rhipicephalus appendiculatus* 216, 357, 361  
*Rhipicephalus sanguineus* 351, 357, 359, 360  
*Rhipicephalus siberica* 360  
*Rhipicephalus zambeziensis* 216  
Rhizocephala 368  
*Rhodnius* 134  
*Rhodnius prolixus* 381  
rhoptries 154, 160  
*Rickettsia* 357, 359, 389  
*Rickettsia conori* 357, 360  
*Rickettsia felis* 389  
*Rickettsia helvetica* 360  
*Rickettsia parkeri* 359  
*Rickettsia prowazekii* 341, 379, 389  
*Rickettsia quintana* 379  
*Rickettsia rickettsii* 356, 359
- Rickettsia slovacica* 360  
*Rickettsia typhi* 389  
ring stage 194, 200  
river blindness 330, 404  
RNA-editing 121  
Roble's disease 332  
*Rochalimea quintana* 379  
Rocky Mountain Spotted Fever = RMSF 356, 357, 359  
round worms 294  
rodent malarial 399  
*Rodentolepis nana* 3, **275**, 295, 389  
ROP16, ROP5, ROP17/18 = rhoptry proteins 183
- s**
- Sacculina carcini* 23, 24, 34–35, **368**  
– life cycle 369  
sacculinisation 23  
SAG = surface antigens 181  
salivaria 120  
*Salmonella* 148  
sand tampan 358  
sandflies 141, 142, 404; *see* Phlebotominae 404  
sandfly fever 407  
*Sarcocystis* 155, 165, **187**  
*Sarcocystis arieticanis* 187  
*Sarcocystis bertrami* 187  
*Sarcocystis capracanis* 187  
*Sarcocystis cruzi* 187  
*Sarcocystis dispersa* 187  
*Sarcocystis gigantea* 78, 157, 187, 190  
*Sarcocystis hirsuta* 187  
*Sarcocystis hominis* 187  
*Sarcocystis miescheriana* 187  
*Sarcocystis muris* 187  
*Sarcocystis singaporensis* 187, 190  
*Sarcocystis sui hominis* 187, 188,  
– development 188  
– life cycle 188  
– morphology 189  
– pathology 189  
*Sarcocystis tenella* 187  
*Sarcophaga* 412  
*Sarcoptes* 345  
*Sarcoptes scabiei* 74, 364  
scabies mite 364  
scaly leg 364  
*Sceloribates* 345  
*Schistocephalus solidus* 28  
*Schistosoma* 3, 233, 234, **238**  
– control 247  
– development 239

- egg granuloma 245, 246
- epidemiology 247
- genome 244
- immunobiology 245
- morphology 242
- pathology 245
- Schistosoma bovis* 248
- Schistosoma haematobium* 237–248
- Schistosoma intercalatum* 243
- Schistosoma japonicum* 237–248
- Schistosoma mansoni* 21, 29, 58, 69, 70, 74, 80, 237–248
- Schistosoma matthei* 248
- Schistosoma mekongi* 243
- Schistosoma nasale* 248
- schistosomosis 245
- schistosomulum 240, 244
- schizogony 155, 157, 191
- schizont 156, 194
- Schmallenberg-Virus* 394
- Schüffner's dots 198
- scolex 264, 267
- screwworms 413
- Scrub Typhus 364
- scutum 350
- sea anemone 5
- secondary endosymbiosis 161
- selection pressure 38
- selfish gene 40
- Semisulcospiria* 258
- Semisulcospiria libertina* 257
- serotonin 88
- Sergentomyia* 405
- setae 346
- Setaria cervi* 412
- sexual reproduction 42
- sexual transmission 16, 103, 106, 133, 365, 378
- sexual selection 51, 54
- sheathed larva 295
- Siberian Tick Typhus 360
- sickle cell anemia 48
- sickle cell gene (HbSS) 48
- Simuliidae** 330, 391, **401**
  - biology and development 402
  - control 404
  - disease transmission 404
  - morphology 403
- Simulium* 332, 394, 395, 403
- Simulium damnosum* 332, 401, 402
- Simulium exiguum* 402
- Simulium metallicum* 332, 402
- Simulium neavei* 332, 402
- Simulium ochraceum* 332, 402
- Simulium ornatum* 402
- Siphonaptera** 371, **384**
  - biology and development 384
  - morphology 385
  - disease transmission 388
- sleeping sickness 121
  - advanced stage 121, 127
  - epidemics 126
- small liver fluke 259
- Snoring Disease 248
- social parasitism 7
- Sodalis glossinidius* 418
- somatic larvae 319
- species complexes 395
- spicule 299
- spinose ear tick 358
- Sphaerularia bombi* 27
- Spilopsyllus cuniculi* 384, 385
- Spinochondodes tellinii* 92, 93
- splénomegaly 201
- sporoblast 157, 165
- sporocyst 157, 165
- sporogony 155, 157
- sporont 157, 165
- sporozoite 155, 157, 165
- social parasitism 7
- sowda 332
- spliced leader 120, 244, 294
- spring rise 313
- SRS = SAG1-related sequence
- Steccherinum ochraceum* 402
- Stephanofilaria stilesi* 413
- Sternostoma tracheaculum* 348
- stercoraria 121
- stichocyte 303
- stichosome 300, 303
- stickleback 55
- stieda body 165, 172
- stigmata 346
- Stomoxys calcitrans* 411, 412
- Streblidae 391, 418
- strobila 267
- strobilocercus 283
- Strongyloides ratti* 28
- Strongyloides stercoralis* 3, 10, 11, 74, **306**
  - development **306**
  - life cycle 307
  - morphology 308
  - pathology 308
- Stylorhynchus* 26
- Succinea putris* 249
- sucking lice 375
- summer dermatitis 414
- superinfection 15

- Surra 133  
 SUSA = SAG-unrelated surface antigen 181  
 susceptibility 12  
 swimmer's itch 247  
 sylvatic cycle 304  
 symbiosis 5  
 syndermata 289  
*Syphacia muris* 324
- t**
- Tabanidae** 133, 408, 410  
 – development and biology 409  
 – morphology 409  
 – transmission of diseases 410  
 tachyzoite 176  
*Taenia* 267, 277, 295  
*Taenia asiatica* 277, 278, 282  
*Taenia crassiceps* 71, 81, 82, 268, 277  
*Taenia multiceps* 85, 278  
*Taenia ovis* 278  
*Taenia polyacantha* 264  
*Taenia saginata* 3, 14, 26, 277, 278, 279, 280, 281  
*Taenia serialis* 278  
*Taenia solium* 26, 82, 269, 277–279, 280, 282
- Taeniidae** 277  
 – development 277  
 – immunobiology 279  
 – morphology 278  
*Teladorsagia* 312  
 tegument 228, 234, 245, 268  
 temporary parasites 10  
 tertian malaria 199  
*Tetrameres americana* 84  
 tetrathyridium 272  
 T helper cells (Th1, Th2, Th17, T reg) 62, 63, 228,  
 T cell subpopulations 63, 148  
 thalassemia 49, 50  
*Theileria* 160, 211, 213, 214, 215  
 – genome and cell biology 217  
 – development and morphology 217  
 – life cycle 216  
*Theileria annulata* 161, 215, 216, 217  
*Theileria equi* 215  
*Theileria hirci* 215  
*Theileria mutans* 215  
*Theileria ovis* 215  
*Theileria parva* 21, 161, 215, 216, 217, 218, 357, 361  
 – Theileriidae 156, 210  
 theileriosis 361  
*Thelazia* 412  
 theront 219  
*Thiara* 257  
 Thorn-headed worms 288  
 threadworm 306  
*Thymallus thymallus* 271  
 Tick 344, 350; *see* Metastigmata 350  
 Tick-Borne Encephalitis = TBE 356  
 Tick-Borne Lymphadenopathy 360  
 Tick-borne Relapsing Fever = TBRF 358, 360  
 Tick paralysis 359  
 Tick Typhus 357  
 tomites 219  
*Toxocara* 296, 315, 319  
*Toxocara canis* 296, 318  
 – development 318  
 – epidemiology 320  
 – life cycle 319  
 – morphology 320  
 – pathology 320  
*Toxocara cati* 298  
*Toxoplasma gondii* 3, 13, 17, 38, 42, 59, 69, 73, 78, 85, 86, 146, 159, 161, 162, 164, 176  
 – cell biology 181  
 – congenital toxoplasmosis 179  
 – development 176  
 – encephalitis 180  
 – effectors 183  
 – immunobiology 183  
 – life cycle 177  
 – morphology 178  
 – stage conversion 182  
 – toxoplasmosis 178, 181  
 tracheae 339  
 transmission avoidance model 53  
 trans-sialidases 139  
 trematode 230  
 Trench Fever 379  
*Triatoma* 134  
*Triatoma brasiliensis* 381  
*Triatoma dimidiata* 381  
*Triatoma infestans* 10, 380–381  
 Triatominae 380  
*Tribolium confusum* 274  
*Trichinella* 27, 69, 296, 300, 302, 305  
*Trichinella britovi* 302, 304  
*Trichinella elegans* 303  
*Trichinella murrelli* 302, 304  
*Trichinella nativa* 301, 302  
*Trichinella nelsoni* 301, 302  
*Trichinella papuae* 302, 303  
*Trichinella pseudospiralis* 300, 302, 303  
*Trichinella spiralis* 11, 14, 79, 297, 300  
 – development 302  
 – epidemiology 304



- genome 303
  - immunobiology 304
  - life cycle 301
  - morphology 303
  - pathology 304
  - Trichinella zimbabwensis* 302, 303
  - Trichobilharzia* 247
  - Trichobilharzia ocellata* 80
  - Trichocephalida 300
  - Trichodectes canis* 375, 376
  - Trichodina* 221–222
  - Trichodina myicola* 222
  - Trichomonas gallinae* 105, 106
  - Trichomonas hominis* 105
  - Trichomonas tenax* 105
  - Trichomonas vaginalis* 3, 16, 22, 98, **103**
    - cell biology 105
    - genome 105
  - Trichomonasvirus* 105
  - trichomonosis 105
  - Trichosomoides crassicauda* 27
  - Trichostrongylus* 298, 312
  - Trichostrongylus tenuis* 32
  - Trichuris* 299
  - Trichuris muris* 305, 306
  - Trichuris ovis* 305
  - Trichuris suis* 76, 295, 305, 306
  - Trichuris trichiura* 3, 303, **305**
  - Trichuris vulpis* 305
  - Trimenopon hispidum* 375
  - tritosternum 347
  - Tritrichomonas foetus* 106
  - Trombiculidae 363
  - Trombicula alfreddugesi* 363
  - trophic transmission 16
  - trophont 219
  - trophozoite 107, 155, 194
  - true bugs 380
  - trypanolytic serum factor 125
  - Trypanoplasma borreli* 117
  - Trypanosoma* 118, 121, 124, 133, 419
  - Trypanosoma brucei* 3, 19, 21, 64, 69, 71, 119, **121**, 143, 415
    - antigenic variation 128, 129
    - cell and immune biology 127
    - control 127
    - development 121
    - distribution and host range 124
    - life cycle 123
    - morphology 124
    - polycystronic transcription 130
    - sleeping sickness 125
    - ultrastructure 119
  - Trypanosoma congolense* 122, **131**, 341, 415
  - Trypanosoma cruzi* 3, 67, 69, 71, 119, 120, 122, **134**, 146, 341, 380
    - cell and immune biology 138
    - Chagas disease 136
    - development and morphology 134
    - life cycle 135
  - Trypanosoma equinum* 16, 122
  - Trypanosoma equiperdum* 16, 121, 122, 133
  - Trypanosoma evansi* 122, 133, 410, 411
  - Trypanosoma infestans* 134
  - Trypanosoma lewisii* 122
  - Trypanosoma melophagium* 122
  - Trypanosoma rangeli* 122, 136
  - Trypanosoma simiae* 341
  - Trypanosoma theileri* 122
  - Trypanosoma vivax* 122, 132–133, 415
  - Trypanosomatidae 117
  - trypomastigote 118
  - tsetse flies 415; *see* Glossinidae 415
  - tsetse belt 124
  - Tsutsugamushi Disease 364
  - Tunga* 388
  - Tunga penetrans* 386, 388
  - Tunga trimamillata* 388
  - tularemia 356, 361
- u**
- undulating membrane 103, 118
- v**
- vaccination 185, 247, 279, 311, 315, 354
  - vagabond skin 378
  - valva cardiaca 83
  - variant surface glycoprotein (VSG) 127, 129
  - variant-specific surface protein (VSP) 102
  - Varroa* 345, 350
  - Varroa destructor* 35, 36, **348–350**
    - life cycle 349
  - Varroa jacobsoni* 348
  - varroosis 348
  - vector 16, 340
  - vectorial capacity 342
  - vertical transmission 17, 176, 186, 211, 213, 342
  - VESA1 –variable cytoadherence protein 215
  - virulence 15
  - visceral leishmaniosis 150, 404
  - vitellarium 229
  - vivipary 321
  - VSG = variant surface Glycoprotein 127, 129
  - VSP = variant-specific surface protein 102

**w**

- warble flies 413
- West African lagoon cattle 132
- West Nile Virus* = WNV 393, 399
- whale louse 25
- whipworm 305
- white spot disease 219
- Wigglesworthia glossinidae* 418
- Wolbachia* 326, 329, 333, 342, 418
- Wolbachia pipientis* 418
- wormy persons 228
- wrong host 12
- Wuchereria bancrofti* 3, 296, 325, **326**, 342, 396, 400
  - development 327
  - genome 328
  - life cycle 327

- morphology 328
- pathology 329

**x**

- xenodiagnosis 137
- Xenopsylla cheopis* 388

**y**

- Yellow Fever 342, 399
- Yersinia pestis* 388, 389

**z**

- Zebrina detrita* 259, 260, 261
- Ziemann's dots 200
- Zika Virus* 399
- zoonosis 13, 99, 141