

Index

• A •

abscesses, 202–203, 349
access to housing for maintenance, 96
activity level as indication of health, 31
adult chickens
 age, determining, 71
 flock, starting with, 58
 health, checking, 69–70
 sex, determining, 70–71
 show, purchasing for, 71
 starting flock with, 69–72
 where to buy, 69
adult layer rations, 156
advertising on egg cartons, 369
aflatoxin in peanuts, 154
A-frame housing options, 88, 97
age of chickens
 aged layers, retiring, 306
 determining, 71
 egg production problems, 317
 internal factor affecting laying, 301
 meat birds, for butchering, 334
agricultural zoning, 10
Agriculture, U.S. Department of (USDA)
 bird flu H5N1 strain, 366
 butchering, inspection of, 337
 reportable diseases, 220
Air Sac disease (Mycoplasmosis), 189, 213,
 215
air space in eggs, 266, 267, 309
albumin, 309, 312
“all stock” feed, 158
alligators, 176
all-in-one housing units, 87, 97
Ameraucana breed, 26, 48, 248
American Poultry Association, 40, 43,
 71, 236
amino acids in poultry feed, 149
ammonia odors in housing, 80
amoxicillin, 202
Amprolium, 209
Ancona breed, 45
angel’s trumpet seeds, 154

Animal and Plant Health Inspection Service
 of the USDA, 220
animal bites, treating, 201
animal control officers, 173
animal ownership, laws concerning, 11
antibiotics, 202, 203, 332
antistress formula for water, 286
Araucana breed, 23, 26, 48, 49, 248
artificial insemination, 235
“as hatched” batch of chickens, 225
Australorp breed, 47, 48, 248
automatic egg turners, 257, 263–264
automatic feeders, 126, 127
automatic waterers, 126, 129–130, 135
avian encephalomyelitis, 189
avian flu, 170, 190, 219, 295, 365–366
avian pox/fowl pox, 189, 213–214
axes for butchering, 340–341, 345–346

• B •

bantam breeds, 19, 42, 52–53, 193, 225
barbs on feathers, 30
Barnevelder breed, 43
Barred Rock breed, 44
bats, 172
battery brooders, 279
battery-powered lights, 117
beaks, 26, 204, 291
beards, 28, 67
bedding
 baby chicks, 253
 brooders, 278, 288, 289
 composting and using as fertilizer,
 136–137
 disposal of, 136–138
 materials to not use, 125
 types of, 123–124
behavior of chickens
 bathing in dust, 38, 210
 communication, 32–33
 hen celibacy, 36–37
 information processing, 32
 knowing about, 31–32

- behavior of chickens (*continued*)
 - reproductive and maternal behaviors, 37–38
 - romance, 36
 - sexing by appearance, 226
 - sleeping, 34–35
 - socializing, 35–36
 - table manners, 33–34
- belly, feathers on, 29
- Belt Hatchery, 63
- benefits, sharing with neighbors, 20
- bird flu, 170, 190, 219, 295, 365–366
- birds, wild, 157, 166, 170, 210
- birds of prey, 172, 175–176, 178, 362
- black sex links, explained, 239
- Black Star breed, 46
- blastoderm, 231, 312
- blastodisk, 227, 229, 266, 309, 312
- bleach solution for cleaning, 343
- bleeding
 - feathers, trimming, 196, 197
 - nails, trimming, 196
 - new birds, introducing, 193
 - shock, minimizing, 201
- blood spots in eggs, 313
- blue eggs, 26, 48
- bobcats, 177
- book
 - about, 1
 - assumptions by authors, 2–3
 - conventions used in, 2
 - future directions, 5–6
 - icons used in, 5
 - organization of, 3–4
 - what not to read, 2
- botulism, 214
- Brahma breed, 43, 77, 248, 326
- breasts, 27, 332, 349
- breeding
 - getting birds ready for, 240–242
 - hybrids, producing, 238–239
 - purebred chickens, producing, 236–237
 - selecting birds for, 235–240
 - sex/color-linked colors, producing, 239–240
- breeding, chickens for
 - commercial rations, 157
 - gender, choosing, 59
 - number of, deciding on, 60
 - pasture feeding, 152
- breeds of chickens
 - bantam breeds, 52–53
 - breed terminology, 40–42
 - categorization of breeds, 42–43
 - dual-purpose breeds, 43–44
 - heritage and rare breeds, 53–54
 - laying breeds, 44–49
 - meat chickens, 49–51, 325–326
 - needs, correct for, 359–360
 - overview of, 39–40
 - show breeds, 51–52
 - traits, breeding for, 39
- broiler breeds, 78, 145, 152, 218. *See also* meat birds
- broiler chicks, 277, 285, 293. *See also* meat-type chicks
- broiler feed, 156, 285, 330
- “broiler grower-finisher” rations, 156
- broiler starter, 155, 330
- brooders
 - bedding for, 278
 - body of, 280–281
 - chicks’ first few days, 289–291
 - commercial brooders, buying, 278–279
 - defined, 274
 - heating, 275–276, 281–283
 - homemade, 279–284
 - lighting, 277
 - moving chicks to, 253, 274
 - placement of, 279
 - placing chicks in, 288–289
 - purpose of, 273
 - safety, 283–284
 - size and shape, 275
 - temperature and chick behavior, 276–277
- broodiness, 229, 232, 244
- broody hens, 37, 320–321
- brown eggs, 26, 46–48, 368
- Buckeye breed, 54
- bullying behaviors, 193–194
- bumblefoot, 83, 202–203
- burial of dead birds, 220
- butchering, hired out, 335, 337, 338–339
- butchering, home
 - cutting up and packaging, 352–356
 - deciding about, 335–336

freezing, 355–356
killing, 344–345, 345–347
location, choosing, 340
neighbors, consideration of, 20
packaging/freezing supplies, 343–344, 354
preparing for, 339–344
process of, 344–352
butcher's paper, 344, 354
buttercup combs, 25
Byrne, Christine (coop designer), 82
Byrne, Michael (coop designer), 82

• C •

cabinet-style incubators, 256, 257
Cackle Hatchery, 63
cackling, 33, 318
caecal worms, 190
cage-free housing, 84, 97, 369
cages as housing option, 82–84, 97
calcium, 146, 156, 303
calcium and mineral mix, 159–160
calcium gluconate, 206
California White breed, 45
Campine breed, 22
candling an egg, 258, 265–266, 312–313
cannibalism, 144, 194
caponized birds, 197, 326–327
carbaryl dust, 210
carbohydrates, 145–146, 149
carbon monoxide, 117, 279, 284
castration of birds, 197, 326–327
catalogs as source of fertile eggs, 261
catching sticks, 186
cattle panels for fencing, 120–121
cere, explained, 26
chalazae, 309, 312
Chantecler breed, 54, 77, 326
chemical contamination of feed, 132
Cherry Egger breed, 46
chick starter feed (ration), 155, 253
chicken biology and behavior
 behavior, aspects of, 31–38
 body parts, 23–30
 chicken physique, 21–22
 health, indications of, 30–31
chicken garden housing, 93
chicken tractor housing, 90–91, 97
chicken wire, 120, 174
chicken-keeping, deciding about
 basic care and requirements, 13–15
 intentions for, 15–18
 legal issues, 9–12
 neighbors, 18–20
chickens, buying
 adults, starting with, 69–72
 chicks, starting with, 61–69
 costs, counting, 60–61
 eggs, starting with, 56
 planning the flock, 55–60
 show birds or pets, 18
 typical, 14
chickens, keeping happy and healthy
 carrying and holding, 187–188
 catching chickens, 185–187
 grooming procedures, 194–197
 illness and disease prevention, 188–191
 protection of the flock, 181–185
 stress management, 191–194
 veterinarian, finding, 197–198
chicks
 advantages of, 56
 baby chicks, care of, 253–254
 catching, 186
 disadvantages of, 57
 flock, starting with, 56–58
 handling, 68–69, 295–296
 hatching and early care, 37–38
 hatching in incubators, 264
 hawks, 175
 mash, 158
 places to purchase, 61–65
 purchasing, tips for, 65–68
 starter rations, 155, 253
 starting flock with, 61–69
 time to purchase, 65
chicks, raising
 brooders, basics of, 274–279
 brooders, making, 279–284
 brooders, raising chicks in, 288–292
 children, 68–69, 294–296
 feeding and watering, 285–288
 growth, stages of, 292–294
 hens, helping, 284–285
 major needs, 273
chiggers, 212

- children
 - chickens, handling, 68–69, 295–296
 - chickens, helping to raise, 294–295
 - housing options, 95
 - human health issues, 184, 295
 - meat chickens, 333
 - stress from, minimizing, 305
- choline, 146
- chucking sound, 33
- cleaning/cleanliness
 - cleaning coops, 132–138
 - disease prevention, 184, 292
 - equipment and supplies, 132–133, 342–343
 - feeding areas and containers, 135, 166
 - home butchering, 348, 350–352
 - housing requirement, 81
 - neighbors, consideration of, 19
 - pre-fab coops, 104
- cloaca, 71, 142, 224
- clucking sound, 33
- clutch of eggs, defined, 248, 320
- cobalt, 146
- Coccidia, 190, 207, 209
- coccidiosis, explained, 150, 207, 209
- coccidiostats, 150, 190, 209
- Cochin breed
 - broody behavior, 229, 248
 - described, 51, 52
 - new birds, introducing, 193
 - temperature control in housing, 77
 - trimming vent feathers, 242
- cockerels
 - chicks, purchasing, 66
 - explained, 58
 - hens, separating from, 294
 - meat birds, choosing as, 58–59, 326
 - new birds, introducing, 192, 254
- cockfighting, 194
- cold weather
 - chicks, 253, 292
 - crock pots as water containers, 129
 - housing, 97
 - laying, affecting, 302
 - protection of flock, 182–183
- color of chickens, 42, 47, 66, 226
- color vision, 25
- colored-egg layers, breeds for, 26, 48–49
- Columbian pattern, 44, 240
- combs
 - adult chickens, buying, 70, 71
 - chicken physique, 24–25
 - chicks, buying, 67
 - frostbite, 70, 182, 205
 - injuries and infections, 203
 - non-laying hens, 318
 - removal of, 194–195
 - sexing, 226, 227
- commercial chicken, controversy over, 325
- Common Chicken mites, 211
- communication by chickens, 32–33
- compact fluorescent light bulbs, 116
- composting manure and bedding, 136–137
- contour feathers, explained, 28
- conventions used in the book, 2
- cooling measures, 117–118
- coop, defined, 82. *See also* housing;
housing type, choosing
- coop design and construction
 - additional space, planning for, 114
 - building new, 101–103
 - electrical wiring, 115
 - existing structures, using, 101
 - fences and posts, 120–122
 - flooring, 119
 - framing, 119–120
 - heating and cooling, 117–118
 - legal restrictions, 100
 - lighting for, 115–117
 - location for, determining, 105–106
 - materials, shopping for, 118–119
 - nest boxes, 111–114
 - planning, need for, 99, 106
 - plans for, drawing, 107
 - prefab coops, 103–105
 - roosts, 108–111
 - size and shape, 107–108
 - ventilation, 108
- coops, furnishing and housekeeping
 - bedding materials, 123–125
 - cleaning, 132–138
 - feed, storage of, 130–132
 - feeding containers, 126–128
 - furnishing costs, 14
 - nest bedding, 125
 - watering containers, 128–130

Cornish breed, 50–51
 Cornish Game hens, 327
 Cornish Rock hybrid (Cornish X)
 broiler rations, 156
 commercial chicken, controversy over, 325
 described, 49, 50
 feeding, time for, 160
 lighting in housing, 79
 meat chicken, choosing, 325–326
 costs
 chicken care requirements, 14–15
 flock, purchasing, 60–61
 furnishing for coops, 14
 homemade feed, 150
 cougars, 177
 county Extension offices, 94, 198, 261, 337
 courtship behaviors, 36, 231–232
 covert feathers, explained, 29
 cowards, chickens as, 370
 coyotes, 175, 178
 crests, 28, 67, 193
 crop, 34, 142, 350–351
 crowing
 courtship behavior, 36
 described, 33
 neighbors, consideration of, 19
 occurrences of, 367
 sex of adult chickens, determining, 71
 sexual maturity, 228, 293–294
 crumbles, 158, 330
 Cuckoo Maran breed, 47
 cultures, and home butchering, 345

• D •

dampness, 80, 183, 253
 Dark Cornish breed, 238
 darkness
 catching chickens, 185–186, 186–187
 home butchering, 344–345
 shock, minimizing, 201
 datura seeds, 154
 death of chickens, 218–220
 debris in eggs, 313
 Decoquinat, 209
 deep litter method of cleaning, 134

Delaware breed, 54, 326
 Department of Natural Resources, 177
 “developer” pullet rations, 156
 Devil Bird, described, 54
 diarrhea, 203
 digestive system, overview of, 142
 disease. *See also* vaccinations
 common diseases, 213–216
 inspection for, after butchering, 349–350
 parasites, barriers against, 190
 prevention, 188–191, 291–292
 quarantine of birds, 190–191
 signs of, 212–216
 transmission, 183–184, 212, 364
 treatment decisions, 216–217
 dogs as predators, 171, 172–173, 177
 doors on coops, 174
 down feathers, 28–29
 drainage in outside areas, 81, 106
 dropping pans, 109, 110, 111
 droppings, worms in, 207
 drowning as butchering method, 345
 dual-purpose breeds, 42, 43–44
 dubbing, explained, 194
 duplex housing options, 92–93
 dust baths, 38, 210

• E •

ears, 25–26, 44, 318
 Easter Egger breed, 26, 48
 egg(s)
 adding to the nest, 250–251
 age of, testing for, 307
 candling, 258, 265–266, 312–313
 care of in the incubator, 263–264
 chickens treated with medication, 217
 cleaning and storage, 308
 collecting, 307–308
 color of, and color of ear skin, 26, 44
 colored-egg layers, breeds for, 26, 48–49
 defined, 227, 306
 discarding, criteria for, 315
 fertile, care of before incubation, 262–263
 fertile, finding and storing, 260–263
 fertility, determining, 312–313, 369
 fertilization of, 230–231

egg(s) (*continued*)

- flock, starting with, 56
- formation of, 230
- freezing, 315
- frozen, quality of, 307
- hatching, 37, 253, 259, 260, 264, 268–271
- inside, characteristics of, 312–314
- laying as sign of sexual maturity, 293, 294
- looking inside during incubation, 264–268
- outside, characteristics of, 310–312
- parts of, 309
- purpose of chicken keeping, 15–16
- quality and taste of organic or brown, 368
- roosters not necessary for, 367
- selling and giving away, 315–316
- storage of, 314–315
- turning, 257, 263–264
- unfertilized, 36–37
- egg binding, 183, 205–206
- egg cartons, 316, 369
- egg producers. *See also* layers, managing, and collecting eggs; laying breeds
 - brooding behavior, lack of, 232
 - explained, 42
 - gender, choosing, 59
 - lighting in housing, 79
 - molting, 192
 - production, encouraging, 304–306
 - production problems, 316–322
- egg tooth, 26, 268
- egg whites, 230, 309, 312
- egg yolks
 - color of, 312, 313–314
 - double yolks, 231, 313
 - location of, 309
 - production of, 229
- eggplant leaves, 153
- eggshells, 163, 310–311
- electric fencing/wires, 172, 174, 175
- electricity, 115–117, 340. *See also* lighting
- electrified netting, 121
- electrocution as butchering method, 345
- embryonic growth, stages of, 266–268
- environmental issues, 106, 137
- Epsom salts soaks, 202
- expiration dates on feed bags, 159
- eyes, 25, 30, 204

● F ●

- fat, nutritional requirements for, 145–146
- Faverolle breed, 54, 326
- feather-footed breeds, 67
- feather-picking, 194
- feathers
 - anatomy of, 29–30
 - colors of, 30
 - health, indications of, 31
 - removal after butchering, 347–348
 - sexing mature chickens, 227
 - trimming, 196–197, 242
 - types of, 28–29
- federally protected birds, 176, 179
- feed
 - “all stock,” 158
 - amounts of, in cold weather, 183
 - broiler feed, 256, 285, 330
 - chick starter feed, 155, 285
 - commercial, 147, 149–150, 154–159
 - costs of, 15
 - diet of chickens, 33–34
 - finisher feed (rations), 156, 293, 330
 - forms of, 157–158
 - game bird feed, 330
 - getting young hens ready to lay, 302–303
 - grower feed (rations), 156, 293, 330
 - homemade, 148, 150–151
 - individually mixed, 148, 150–151
 - insect infestation, 169
 - layer feed (rations), 155–156, 240, 293
 - meat bird feed, 156, 191–192, 285, 330
 - medicated, 155, 186, 330
 - options for, 147–153
 - organic, 330
 - sitting hens, 252
 - starter feed (rations), 155, 284–285, 330
 - storage for, 130–132, 166
 - “sweet feed,” 158
 - vegetarian, 330
- feeding chickens
 - amounts to feed, 161
 - beak injuries, 204
 - chicken behavior, 33–34
 - chicks, 285–287
 - diet management, need for, 142–144

- digestive system overview, 142
 - feeding areas, cleanliness of, 166
 - food sources, 141–142
 - getting birds ready for breeding, 240–241
 - grit supplements, 159–160
 - home butchering, 345
 - molt management, 191–192
 - nutritional needs, 144–147
 - poultry cannibalism, 144, 194
 - routine for meat chickens, 332
 - shock, minimizing, 201
 - things to not feed chickens, 153–154
 - timing feeding, 160
 - treats, 161–163
 - water, 163–164
 - feeding containers
 - chicks, 286, 287, 292, 293
 - perching on feeders, discouraging, 128
 - regular cleaning, 135
 - requirements for, 126
 - roost placement, 110
 - size, types, and placement, 127–128
 - feet, 27, 31, 83, 202–203, 348
 - fences
 - electric, 121, 172, 174, 175
 - materials for, 120–122
 - neighbors, consideration of, 20
 - predators, discouraging, 175, 179, 362
 - safety, 172
 - fertility, 36, 70, 79, 205, 228
 - fertilizer
 - manure and bedding as, 136–137
 - poisoning danger, 185
 - finisher feed (rations), 156, 293, 330
 - “finishing” pullet rations, 156
 - flies, 169
 - flock, defined, 31
 - flock mating, 233–234
 - flooring for coops, 83, 104, 119
 - flu, human, 365
 - fluff, defined, 273
 - folic acid, 146
 - forced-air incubators, 256–257
 - fowl cholera, 189, 214
 - fowl pox/avian pox, 189, 213–214
 - fowl ticks, 211
 - fowl typhoid, 290
 - foxes, 174–175, 178
 - frame of the coop, materials for, 119–120
 - Fraser, Renee (coop designer), 82
 - free-range
 - explained, 84
 - shelters with, 85–86, 97
 - free-range chickens
 - egg collection, 307
 - gapeworms, 208
 - heat, protection from, 182
 - laying eggs outside the nest boxes, 319–320
 - laying patterns, establishing, 303
 - meat birds, 143, 156, 324, 331
 - non-laying hens, 318
 - safety, 171
 - sitting hens, protection for, 251
 - freezing poultry, 343–344, 354–356
 - frizzle mutations, 28
 - frostbite, 70, 77, 182–183, 205
- **G** ●
- gall bladder, 352
 - game bird feed, 330
 - gapeworms, 208
 - gardens and chickens, 136–137, 370
 - gas heaters for brooders, 275, 284
 - gas killing of chickens, 345
 - gender of chickens for starting a flock, 58–59
 - genetics, effect on laying, 301
 - gizzards, 34, 142, 159, 352
 - gloves, 133, 218, 343
 - Golden Comet breed, 46
 - grain moths, 169
 - Gray Jungle fowl, 22
 - greenish-colored eggs, 26, 48
 - grit, 34, 148, 152, 159–160, 285
 - grooming procedures, 194–197
 - grower feed (rations), 156, 293, 330
 - grower pullet rations, 156
 - growling, 33
 - growth, stages of, in chicks, 292–294

• H •

- hackle feathers, 26, 226, 227
- hackles, explained, 29
- hairworms, 190
- Hamburg breed, 45, 46, 248
- hand washing, 68–69, 291, 295
- handling chickens, 187–188
- handling chicks by children, 68–69, 295–296
- hand-plucking, 348
- hard-feathered chickens, 28
- hatching
 - hen method of incubation, 253
 - incubators, in, 259, 260, 264, 268–271
 - methods, 245–247
 - poor outcomes, 270–271
- hawks, 175–176, 178, 362
- hay as bedding material, 124
- head injuries, 203, 204
- heads, 24–26, 350
- health
 - adult chickens, buying, 69–70
 - chicks, purchasing, 67–68
 - egg production problems, 317
 - housing options, choosing, 95
 - human, and chickens, 295
 - indications of, 30–31
- health problems, handling
 - chicks in brooders, 289–290
 - death, common causes of, 199
 - death, encountering, 218–220
 - disease, recognizing and treating, 212–217
 - injuries, treating, 200–206
 - medication administration, 217–218
 - parasites, 206–212
- healthy, stress-free chickens, tips for
 - correct breed, choosing, 359–360
 - diet, well-balanced, 363
 - disease transmission, preventing, 364
 - housing suitability, 360
 - lighting supplements as needed, 360–361
 - parasites, control of, 362
 - pest control, 361
 - predators, protection against, 361–362
 - quarantine as needed, 364
 - vaccinations, 363
 - water, providing for, 364
- heart, removal of, after home butchering, 352
- heart attacks in meat chickens, 332
- heat
 - baby chicks, 253
 - broody behavior of hens, 249
 - heat stress, 118, 145
 - laying, affecting, 302
 - protection of flock, 182
 - temperature control in housing, 77–78
- heat lamps, 282, 283–284
- heat sources
 - brooders, 275–276, 281–284
 - shock, minimizing, 201
 - temperature requirements, 117
- heavy breeds, 109, 182
- hen method of incubation
 - adding eggs to the nest, 250–251
 - brooding behavior, 248–250
 - hens and chicks, caring for, 251–254
- hens
 - celibacy, 36–37
 - cockerels, separating from, 294
 - hatching method, 245–246
 - hormones and egg laying, 318, 319
 - layer's life cycle, 300–301
 - laying, factors affecting, 301–302
 - new birds, introducing, 192–193
 - number of eggs laid, 299–300
 - ranking system, 35, 192, 193, 303, 305
 - reproductive system, 228–229
 - roosters, differences from, 23, 24
 - warmth and protection for chicks, 284–285
 - young hens, 302–304
- heritage breeds, 53–54, 156
- Hoffman Hatchery, 63
- hog panels for fencing, 120–121
- Holland breed, 326
- homemade feed, 148, 150–151
- hoop housing options, 88–89, 97
- horse bedding, 124
- housing. *See also* coop design and construction; coops, furnishing and housekeeping
 - access to, for maintenance, 96
 - broody behavior of hens, encouraging, 250

- costs of, 14
 - defined, 82
 - house, proximity to, 105
 - laws concerning, 11
 - location of, 14, 19, 105–106
 - meat chickens, 329–330
 - suitable, providing, 360
 - treating, for parasites, 211, 212
 - housing type, choosing
 - all-in-one units, 87, 97
 - cages, 82–84, 97
 - chicken gardens, 93
 - chicken tractors, 90–91, 97
 - designs, Web site for, 82
 - duplexes, 92–93
 - factors in choosing, 94–97
 - hoop or A-frame housing, 88–89, 97
 - indoor housing, 84, 97
 - pastured poultry, 89–92, 97
 - separate housing, need for, 75
 - shelter with free-range access, 85–86, 97
 - shelters with runs, 84–85, 97
 - specific requirements, 76–81
 - hover, defined, 279
 - Hubbard breed, 325
 - Hubbard Isa Brown breed, 46
 - human health issues, 295
 - hybrid breeds, 49–51, 238–239
 - hybrid chickens, defined, 41
 - hybrid vigor, defined, 238
 - hybridizing, defined, 238
 - hygrometers for incubators, 258
- 1 ●
- icons used in the book, 5
 - Ideal Hatchery, 63
 - identification of birds, 195
 - illness. *See* disease
 - immune system, 192
 - inbreeding, explained, 237
 - incandescent bulbs, 116–117, 282
 - incubating eggs and hatching chicks
 - artificial incubators, 255–264
 - egg hatching, 268–271
 - eggs, development of, 264–268
 - hatching method, choosing, 245–247
 - hen method of incubation, 248–254
 - incubation basics, 244
 - purposes of, 243
 - incubation, defined, 244
 - incubators
 - accessorizing, 257–258
 - care of eggs in, 263–264
 - choosing, factors to consider, 255
 - cleaning, 258–259
 - fertile eggs, finding and storing, 260–263
 - hatching method, 246
 - humidity, 258, 260, 264
 - setting up and caring for, 258–260
 - temperature adjustment, 259
 - types of, 256–257
 - individually mixed feed, 148, 150–151
 - indoors-only housing, 84, 97
 - infection with skin injuries, 202
 - infectious bronchitis, 189, 214, 311
 - infectious coryza, 189, 214–215
 - infrared heat lamps for brooders, 276, 282
 - infundibulum, explained, 228–229
 - injuries
 - broken legs or wings, 204
 - egg binding, 183, 205–206
 - examining the bird, 200
 - foot sores, 202–203
 - frostbite, 70, 77, 182–183, 205
 - head injuries, 203–204
 - parasites, 190, 206–212, 241, 362
 - shock, minimizing, 200–201
 - skin injuries, 201–202
 - insects, 145, 169, 209–212
 - insulation for brooders and coops, 104, 279
 - intelligence of chickens, 32, 370
 - intermediate hosts of tapeworms, explained, 208
 - intermittent organ, 225, 228
 - iron, benefits of, 146
 - Isa Brown breed, 239, 248
 - isolation of chickens, 201, 204, 251
 - isthmus, explained, 230
- 1 ●
- Japanese breed, 53, 248
 - Jersey Giant breed, 49, 51, 249, 326

• K •

- keratin in feathers, 29
- killing chickens
 - equipment for, 340–341, 346–347
 - methods for, 345–347
 - time of day, choosing, 344–345
- killing cones, 341, 346–347
- kitty litter, 125
- knife sharpeners, 343
- knives for home butchering, 340, 342, 346

• L •

- La Fleche breed, 54
- labels
 - feed bags, 158–159
 - packaging poultry, 354, 355
- lacerations, treating, 201–202
- large roundworms, 190
- larvae of tapeworms, 208
- laryngotracheitis, 189
- latches on coops, 174
- layer feed (rations), 155–156, 240, 293
- layer-breed chicks, 155, 277, 285, 293
- layers, managing, and collecting eggs
 - egg collecting, cleaning, storing, 306–308, 314–316
 - hens, expectations of, 299–302
 - hens' laying years, managing, 302–304
 - production, encouraging, 304–306
 - production problems, 316–322
 - quality, assessing, 309–314
- laying breeds. *See also* egg producers
 - cold, protection from, 183
 - described, 44–49
 - feed, 147, 161
 - feeding, time for, 160
 - housing for, choosing, 94, 97
 - hybrids, producing, 238
 - meat breeds, bred with, 239
 - number of, deciding on, 59
 - pasture feeding, 152
 - pre-fab coops, 103
 - protein requirements, 145
 - lead-based paint, 185
 - leg bands, 195
- legal issues
 - chickens, raising in cities, 12, 366
 - eggs, selling, 315–316
 - home butchering, 335, 336
 - information about, 10–11
 - manure used as fertilizer, 137
 - neighbors, consideration of, 20
 - overview of, 9–10
 - reportable diseases, 213, 220
 - restrictions on housing, 100
- Leghorn breed, 248
- legs, 27, 29, 186, 204, 236
- lice, 133, 210
- light bulbs, 116–117, 282
- lighting
 - brooders, 277, 281–284
 - broody behavior of hens, 249
 - bullying behaviors, 194
 - coops, fixtures for, 116–117
 - dim lights or darkness in housing, 80
 - egg production, 302, 304–305
 - feeding, 160
 - fertility, 79, 228
 - getting birds ready for breeding, 241
 - housing requirements, 79–80
 - meat chickens, feeding, 329, 330–331
 - nest boxes, 114
 - night lights for safety, 171, 362
 - optimum amount and location, 115–116
 - rats, discouraging, 168
 - schedule for, 116
 - supplemental as needed, 360–361
- lincomycin, 202
- linseed oil, 211
- litter
 - brooder bedding, 278
 - defined, 123
 - housing cleanliness, 81
 - meat chickens, 329, 332
- liver, 350, 352
- local breeders, purchasing chicks from, 64
- location for home butchering, 335, 340
- location for housing, 14, 19, 105–106
- locks on coop doors, 362

• M •

- maggots, 169
- magnesium, 146
- magnum area, explained, 230
- mail-order chicks, 57, 62–63
- manganese, 146
- manure
 - burying, 138
 - collection under roosts, 109, 110, 111
 - composting and using as fertilizer, 136–137
 - disposal of, 136–138
 - maggots in, 169
 - neighbors, consideration of, 19
 - pans or doors for, 104
- Maran breed, 47, 248
- Mareks disease, 66, 189, 215, 290
- mash, 158, 330
- mating
 - artificial insemination, 235
 - behaviors, 231–232
 - feathers, bare patches in, 31
 - fertilization of eggs, 230–231
 - flock mating, 233–234
 - getting birds ready to breed, 240–242
 - pair and trio mating, 234
 - reproductive behavior, 231–232
 - reproductive system, 227–230
 - selecting birds for breeding, 235–240
 - sexing chickens, 223–227
- meal worms, 169
- meat bird feed (rations), 156, 191–192, 285, 330
- “meat bird starter,” 155
- meat birds
 - broiler breeds, 78, 145, 152, 218
 - broiler rations, 156
 - commercial feed, 147, 149
 - explained, 42
 - feed, amount needed, 161
 - feeding, time for, 160
 - free-range conditions, 143
 - gender, choosing, 58–59
 - heat, protection from, 182
 - housing for, choosing, 94, 97
 - hybrids, producing, 238
 - laying breeds, bred with, 239
 - lighting for, 79, 80, 116
 - medications, 217, 218
 - number of, deciding on, 59–60
 - pasture feeding, 152
 - purpose of chicken keeping, 16–18
 - sleeping locations for, 112
 - temperature control in housing, 78
 - types of, 49–51
- meat birds, butchering
 - hiring out butchering services, 337–339
 - packaging home-butchered poultry, 352–356
 - planning for, 333–336
 - preparing to butcher, 339–344
 - process of, 344–352
- meat birds, raising
 - approaches to, 324–325
 - choosing the correct chickens, 325–327
 - meat chickens, caring for, 329–333
 - number of chickens, deciding on, 328–329
 - reasons for, 323–324
 - time of year, choosing, 327–328
- meat-type chicks. *See also* broiler chicks
 - broiler chicks, 277, 285, 293
 - feeding process, 286
 - starter rations, 155
 - worm medications, 209
- medicated feed, 155, 286, 330
- medications
 - administering, 217–218
 - labels on feed bags, 159
- mental state, indications of, 31
- metal posts for fencing, 121
- mice, 157, 166–167
- microchips, 195
- midsection, feathers on, 29
- mineral oil, 211
- minerals, nutritional, 146–147
- minks, 176, 178
- Minorca breed, 45, 46, 248
- misconceptions
 - bird flu, 365–366
 - chickens, keeping in pens, 367
 - chickens as being dumb and cowardly, 370
 - chickens as vegetarians, 368

- misconceptions (*continued*)
 city, raising chickens in, 366–367
 crowing, time of, 367
 egg cartons, advertising on, 369
 fertilized and unfertilized eggs, 369
 home gardens, chickens in, 370
 organic and brown eggs, 368
 roosters needed for egg production, 367
 mites, 133, 210–211
 mixed breeds, defined, 41
 mobile housing options, 89–92, 97
 mobile poultry processing units, 337
 mobile shelters with runs, 92
 Modern Game breeds, 51, 194
 moist heat for egg binding, 206
 mold
 environment, 183, 278
 food, on, 153, 160
 molt period, explained, 28
 molting
 egg laying, 229, 301
 explained, 191
 protein requirements, 145
 stress, diffusing, 191–192
 moniliasis (thrush), 215
 morning glory seeds, 154
 Moshier, Erin (coop designer), 82
 mouth, 30
 movable pens, 330
 muffs, 28, 67
 Murray McMurray Hatchery, 63
 mutations, defined, 41
 Mycoplasmosis/CRD/Air Sac disease
 (*mycoplasma gallisepticum*), 189, 213,
 215
- **N** •
- nails, trimming, 195–196
 National Poultry Improvement Plan, 290
 National Research Council, 144
 neck
 chicken physique, 24, 26
 feathers, 29
 removal of, after home butchering,
 350–351
 wringing, 347
 necropsy, 217, 219–220
 neighbors, consideration of, 18–20, 95, 104,
 106
 nest boxes
 broody behavior of hens, 249
 egg layers, for, 16
 grouping and placement of, 114
 layers, encouraging, 303
 laying eggs outside, 318–320
 lighting in housing, 79
 materials for, 112
 nesting material, 125
 number needed, 113–114
 overview of, 111–113
 pre-fab coops, 103
 regular cleaning, 135
 roost placement, 110
 size, 113
 young hens, 294
 nesting behaviors, 232
 new birds, introducing, 192–193
 New Hampshire breed, 248
 New Hampshire Red breed, 47, 238
 Newcastle disease, 189, 215–216, 290, 311
 niacin, 146
 nipple watering systems, 129, 164
 Northern Fowl mites, 211
 nose, 30
 nostrils, 26
 “Nutrient Requirements of Poultry”
 (National Research Council), 144
 nutrition
 egg production problems, 317
 fats and carbohydrates, 145–146
 meat chickens, 330–331
 protein, 145
 vitamins and minerals, 146–147
 Web site for, 144
 well-balanced, 363
- **O** •
- oil gland, 351
 Old English Game breed, 51, 52, 194, 249
 omnivorous, defined, 141
 omphalitis (mushy chick), 216, 271
 oocysts of *Coccidia*, 209

opossums, 173, 178
organic eggs, 368, 369
organic feed for meat chickens, 330
organs, removal of, after butchering,
351–352
Orpington breed, 43, 249, 326
outcrosses, explained, 237
outdoor space for egg layers, 16
ovaries, 228
overhead heat source for brooders, 281
oviduct, explained, 228
owls, 175–176, 178, 362
oxalic acid in rhubarb leaves, 154
oxygen in incubators, 260
oyster shells, crushed, 159–160

• p •

packaging for home-butchered poultry,
343–344, 354–355
pair mating, 234
pantothenic acid, 146
paper towels for home butchering, 343
parasites
barriers against, 190
chiggers, 212
coccidiosis, 209
control of, 362
external, 209–212
fowl ticks, 211
internal, 207–209, 241
lice, 210
mites, 210–211
overview of, 206–207
worms, 207–209, 241
passive compost pile, 136
pasture feeding
daylight, natural, 160
feeding option, 148
gapeworms, 208
management of, 152–153
meat birds, 324, 331
pastured poultry housing, 89–92, 97
patterns of color, 226
Pearl Leghorn breed, 45, 46
pecking behavior, 291
pecking order, 35, 192, 303, 305
pedigrees, 233, 236–237
pellets, 158, 330
pen, defined, 82
Penedesenca breed, 54
perching on feeders, 128
perching on watering containers, 129
perivitelline membrane, 229
permanent identification bands, 195
permethrin, 210, 211
permits, building, 100
perosis, defined, 146
perp-perping sound, 33
persin in avocado, 153
pesticides, 132, 144, 169, 170, 185
pests. *See* predators and pests, controlling
petroleum jelly, 211
pets, chickens as
chicks, 285, 293
gender, choosing, 58
housing for, choosing, 94
lighting in brooders, 277
meat chickens, 333
number of, deciding on, 60
pasture feeding, 152
purpose of chicken keeping, 18
starter rations, 155
phosphorus, 146
pine needles, 125
pinfeathers, 29, 191, 292, 348
piperazine, 208
pipped, defined, 269
plucking
equipment for home butchering, 341–342
hand-plucking, 248
machines for, 335, 347–348
Plymouth Rock breed, 43–44, 238, 249, 326
poison
ingestion, prevention of, 184–185
rodent bait, 167, 168
Polish breed, 51, 52, 193, 248
posts for fencing, 121–122
potatoes, 153, 163
poultry processing plants, finding, 337
power tools for butchering, 345
pre-built structures, using as coops, 101

- predators
 - attacks by, overview of, 170–171
 - catching, 179–180
 - defined, 170
 - determining type of, 177–179
 - evening feeding in the coop, 160
 - fencing, 120, 121
 - fending off, 170–180
 - identification of, 177–179
 - lighting, 116
 - meat chickens, 333
 - neighbors, consideration of, 19
 - pre-fab coops, 104
 - protection from, 76, 361–362
 - runs, roofs for, 119–120
 - seeing, 32
 - sleeping, 34
 - predators and pests, controlling
 - alligators, 176
 - bobcats, 177
 - cougars, 177
 - coyotes, 175, 178
 - dogs, 171, 172–173, 177
 - foxes, 174–175, 178
 - hawks and owls, 175–176, 178
 - importance of, 361
 - insects, 169–170
 - mice, 166–167
 - minks and weasels, 176, 178
 - neighbors, consideration of, 19–20
 - nuisance birds, 170
 - opossums, 173, 178
 - pest prevention, 165–166
 - predators, catching, 179–180
 - predators, determining type of, 177–179
 - predators, fending off, 170–180
 - raccoons, 173–174, 178
 - rats, 167–168
 - skunks, 176
 - snakes, 176
 - pre-fab coops, 103–105
 - primary feathers, 29
 - production of eggs. *See* egg producers
 - propane heat for brooders, 275, 284
 - protection of flock
 - chicks, need of, 273
 - environmental conditions, 181, 182–183
 - poison prevention, 167, 168, 184–185
 - safe handling of chickens, 183–184
 - protein
 - commercial feed, 149, 155–157
 - getting young hens ready to lay, 303
 - meat chickens, 330
 - molting, 191–192
 - nutritional requirements, 145
 - proventriculus, defined, 142
 - pullets, 58, 156, 327
 - pullorum, 65, 190, 213, 216, 290
 - puncture wounds, 201–202
 - purebred chickens, 40–41, 236–237
 - PVC pipe fence posts, 121–122
 - pyrethrum, 210
- *Q* •
- quarantine, 190–191, 364
- *R* •
- rabies, 180
 - raccoon roundworm, 174
 - raccoons, 173–174, 178
 - racks for home butchering, 341
 - rain, shelter from, 76
 - ranking system
 - bullying behaviors, 193
 - hens and roosters, 35
 - layers, 303, 305
 - new birds, introducing, 192
 - rare breeds, described, 53–54
 - rations, defined, 144. *See also* feed
 - rats, 167–168
 - rebel yelling, described, 33
 - record keeping of mating, 233, 236–237
 - recycling of structures to use as coops, 101
 - Red Jungle fowl, 21–22
 - red sex links, explained, 240
 - Red Star breed, 46
 - reflector lights, 281
 - refrigerators for feed storage, 131
 - religion and butchering process, 338, 345
 - reportable diseases, 213, 220
 - reproductive behavior
 - courtship and mating, 231–232
 - nesting and brooding, 232

- reproductive system
 - egg formation, 230
 - hens, 228–229
 - overview of, 227
 - roosters, 228
 - residential zoning, 10
 - Rhode Island Red breed, 47, 48, 238, 249
 - Rhode Island White breed, 47, 249
 - riboflavin (vitamin B2), 147
 - Right to Farm bill, 10
 - Rock X Cornish hybrids. *See* Cornish Rock hybrid (Cornish X)
 - roofs for coops and runs, 119–120, 176
 - roosters. *See also* crowing
 - broody behavior of hens, 250
 - carrying and holding, 188
 - eggs, necessary for, 367
 - fertility, 36, 70, 205, 228
 - hens, differences from, 23, 24
 - iridescent feather colors, 30
 - layer rations, 155
 - layers, encouraging, 303
 - neighbors, consideration of, 19
 - new birds, introducing, 192
 - ranking system, 35
 - reproductive system, 228
 - roosting behavior, 35, 293
 - roosts
 - frostbite of toes, 183
 - importance of, 108–109
 - placement of, 109–111
 - pre-fab coops, 104
 - shape of, 109
 - space requirements, 109
 - rose combs, 24, 25
 - roundworms, 207–208
 - runs, 82, 119–120
- S •**
- saddle area, 27
 - saddle feathers, 227
 - safety. *See also* predators; predators and pests, controlling
 - brooders, 283–284
 - disease transmission, 183–184, 212, 364
 - housing options, choosing, 95–96
 - inspection, after home butchering, 349–350
 - transporting birds, 71–72
 - salmonella, 68, 295
 - sand as bedding material, 124
 - sawdust as bedding material, 124
 - scales, explained, 28
 - Scaly Leg mites, 211
 - scratch, 148, 152, 157
 - Seabright breed, 22
 - secondary feathers, 29
 - self-feeders, explained, 127
 - septic systems, 336
 - sex of adult chickens, 70–71, 301
 - sex of chicks, 66–67, 326–327
 - sex/color-linked chicks, 224
 - sex/color-linked colors, producing, 239–240
 - sexing
 - appearance, by, 225–226
 - defined, 223
 - mature chickens, 226–227
 - vent sexing, 224–225
 - young chickens, 224–226
 - sex-linked chicks, explained, 66
 - sexual maturity, determining, 293–294
 - shade for housing, 78
 - shears, 346
 - shell gland, explained, 230
 - shelter
 - defined, 82
 - free range access, with, 85–86, 97
 - outside runs, with, 84–85, 97
 - predators, discouraging, 179
 - shock, minimizing, with injuries, 200–201
 - shooting as butchering method, 345
 - show breeds
 - commercial rations, 157
 - described, 51–52
 - explained, 42
 - gender, choosing, 58
 - housing for, choosing, 94, 97
 - number of, deciding on, 60
 - pasture feeding, 152
 - purchasing adults, 71
 - purpose of chicken keeping, 18
 - starter rations, 155
 - shredded bark as bedding material, 124

- sickle feathers, 29, 227
 - Silky breed
 - broodiness, 229, 249
 - combs, 24
 - described, 53
 - feathers, 28–29
 - nesting behavior, 232
 - new birds, introducing, 193
 - skin color, 27, 349
 - silver gene, 240
 - silver lace pattern, 240
 - Silver Laced Wyandottes, 44
 - sinks and home butchering, 343, 353
 - sitting hens, 251–252. *See also* hen method of incubation
 - size of chickens, 226
 - size of coop, planning, 107–108
 - skin
 - chicken physique, 27–28
 - injuries and wounds, 201–202
 - inspection of, after butchering, 349, 350
 - skunks, 176, 180
 - sleeping, 34–35
 - snakes, 176
 - socializing by chickens, 35–36
 - soft-feathered chickens, 28
 - solar lights, 117
 - sores, inspection for, 350
 - space in housing
 - additional, planning for, 114
 - housing options, choosing, 94
 - meat birds, 17–18
 - requirements for, 14, 78–79
 - show birds or pets, 18
 - sperm duct, 228
 - sperm pouches in hens, 229
 - spraddle legs, defined, 278
 - spurs, 27, 188, 227
 - squawking, described, 33
 - stair-step roosts, 109–110
 - Standard of Perfection* (American Poultry Association), 40, 43, 236
 - staph, 216
 - started birds, explained, 57
 - starter feed (rations), 155, 284–285, 330
 - stick, killing with, 347
 - still-air incubators, 256
 - straight run batch of chickens, explained, 225
 - strains of chickens, defined, 41
 - straw as bedding material, 124
 - strawberry combs, 25
 - strep, 216
 - stress
 - diffusing, 191–194
 - laying, affecting, 302, 303, 305, 317
 - meat chickens, 331–333
 - stun guns, 345
 - styptic powder, 201
 - sudden death in meat chickens, 332
 - sugar, added to water, 288
 - supplements to food, problems caused by, 148–149
 - “sweet feed,” 158
 - sweet pea seeds, 154
- T ●
- table scraps, 148
 - tail feathers, 29, 48
 - tails, 23, 27
 - tapeworms, 208
 - taste, sense of, 144
 - temperature. *See also* heat sources
 - brooders, chick behavior in, 276–277
 - brooders, source of heat for, 275–276
 - control of in housing, 77–78
 - cooling measures, 117–118
 - eggs, care of before incubation, 262
 - getting birds ready for breeding, 241
 - incubators, artificial, 259
 - laying, affecting, 302
 - meat chickens, 332
 - nest boxes, 114
 - temporary identification bands, 195
 - testes, location of, 228
 - thermometers for incubators, 257–258
 - thiamine (vitamin B1), 147
 - time requirements
 - chicken care, 13
 - home butchering, 336
 - show birds or pets, 18
 - tobacco, 154

- toes
 chicken physique, 27
 chicks, purchasing, 67
 common numbers of, 23
 frostbite, 182, 183, 205
 health, indications of, 31
 tomato leaves, 153
 topknots, 28, 67, 193, 194, 197
 Townline Hatchery, 63
 trachea, gapeworms in, 208
 transporting birds, 71–72
 trapping and releasing predators, 179–180
 traps for rats, 168
 treats for chickens, 161–163, 186
 trees
 predators jumping from, 172
 temperature control in housing, 78
 trio mating, 234
 true bantams, described, 52, 53
 true egg, defined, 266
 tufts, 48
 tumors, inspection for, 350
 Turken breed, 28
- U •
- ultrasonic devices for nuisance birds, 170
 upright combs, described, 24, 25
 urban areas, raising chickens in, 12,
 366–367
 U.S. Department of Agriculture (USDA)
 bird flu H5N1 strain, 366
 butchering, inspection of, 337
 reportable diseases, 220
 utilities, and location for housing chickens,
 105–106
- V •
- vaccinations
 avian pox/fowl pox, 189, 214
 chicks, purchasing, 65–66
 chicks in brooders, 290–291
 fowl cholera, 189, 214
 illness and disease prevention, 188–190
 importance of, 363
 infectious bronchitis, 189, 214
 Mareks disease, 66, 189, 215, 290
 Mycoplasmosis/CRD/Air Sac disease, 189,
 215
 Newcastle disease, 189, 216, 290
 vacuum-sealed bags for poultry, 343, 354
 VanRiper, Froggi (coop designer), 82
 Vantress breed, 325
 vas deferens, 228
 vegetarian feed for meat chickens, 330
 vegetarians, chickens as, 368
 veins in feathers, 29
 vent area
 feathers, trimming, 242
 health, indications of, 31
 non-laying hens, 318
 organ removal, after home butchering,
 351
 sex of chicks, determining, 67
 vent sexing young chickens, 224–225
 ventilation
 brooder safety, 284
 heating sources, 117
 housing, requirement for, 80–81
 incubators, in, 260
 planning for, 108
 vet wrap, explained, 203
 veterinarians, finding, 197–198
 vision
 color vision, 25
 predators, seeing, 32
 vitamins, requirements for, 79, 146–147
 vitelline membrane, 267, 309
- W •
- Walsh, Mike (coop designer), 82
 waste disposal, 335, 336. *See also* manure
 wastewater from home butchering, 336
 water
 antistress formula added to, 286
 chicks, for, 287–288
 drinking, amounts needed, 163–164
 home butchering, 336, 340, 342, 343,
 347, 348
 newly shipped chicks, 288–289
 providing enough clean, 364
 shock, minimizing, 201
 sitting hens, 252

- water containers
 - automatic systems, 126, 129–130, 135
 - brooders, 288–289
 - chicks, 287–288, 292, 293
 - choosing, 129
 - perching on, discouraging, 129
 - regular cleaning, 135
 - requirements of, 128–129
 - roost placement, 110
- wattles
 - age of adult chickens, determining, 71
 - chicken physique, 26
 - frostbite, 182, 205
 - injuries and infections, 203
 - non-laying hens, 318
 - removal of, 194–195
 - sexing by appearance, 226, 227
- weasels, 176, 178
- weevils, 169
- welded wire fencing, 121, 172, 174
- Wellsummer breed, 47
- Welp Hatchery, 63
- West Nile virus, 170, 190, 365
- wet-dry vacuum cleaners, 133
- wheelbarrows, 132
- White Cornish breed, 238
- white eggs, 26, 44–46
- White Leghorn breed, 22, 45, 46, 238
- White Rocks breed, 238, 249
- whole-grain mixtures for feed, 157
- Wilson, Andrea (coop designer), 82
- wind, shelter from, 76
- windows in coops, 133, 171, 176
- wing identification bands, 195
- wings
 - broken, treating, 204
 - chicken physique, 27
 - feathers, 29
 - feathers, trimming, 196
 - health, indications of, 30–31
- wire flooring, 81, 83, 104
- wood chips as bedding material, 124
- wood fence posts, 121
- wood pellets as bedding material, 124
- wood shavings as bedding material, 124
- worms
 - in eggs, 313
 - parasitic, 190, 207–209, 241
- wounds, 202, 350
- Wyandotte breed, 44, 77, 249, 326

• Z •

- zinc, 147
- zoning, 9–10