

## SYSTEMATIC INDEX

*Page references to figures and tables are italicized.*

- abalone, 40  
*Acanthopleura granulata*, 373  
Acanthuridae, 167  
*Acinonyx jubatus*, 64, 299  
*Acipenser*, 328  
Acipenseridae, 61  
Actinopterygii (ray-finned fishes)  
    analysis of, 164, 203, 204, 210, 211, 241–242,  
        241, 244, 253  
    capture techniques, 268, 270, 272  
    as evidence for past environmental  
        conditions, 320, 322, 323, 328, 345, 350  
    feeding behavior, 94  
    human use of, 131, 150, 253, 257, 265, 301, 347  
    in Hypothetical Collection, 156, 198  
    identification of, 167  
    isotopes, 84, 86  
    larva, 90–91  
    life history patterns, 91  
    locomotion, 54–59  
    morphology, 40, 41, 42, 42, 43, 50–54,  
        60–64, 371–372  
    nomenclature, 34–35, 35, 37  
    other hard tissue, 62–63  
    recovery of, 148–149, 149, 150, 156  
    seasonal growth, 74–79  
    sex, 79–80  
    site-formation processes and, 136, 137  
    size, 64–67, 68, 187, 187, 264  
    size and age, 73–74  
    standard measurements, 382  
    structures used in feeding, 43, 46, 47, 49  
    survivorship curve, 101  
    addax, 299  
*Aepyornis maximus*, 325  
Agavaceae, 84  
agave, 84  
agouti, 138, 298, 300  
*Agouti pacá*, 298  
*Ailuropoda melanoleuca*, 92  
albatross, 60  
*Albula vulpes*, 43  
*Alces alces*, 32  
algae, 84  
alligator, American, 46, 80, 90  
Alligatoridae, 46  
*Alligator mississippiensis*, 80  
alpaca  
    disease, 309  
    domestication of, 291, 293, 301  
    herd, 395  
    importance of, 301, 313–314  
    ritual, 121  
    taxonomy of, 291  
amaranth, 84  
*Amaranthus*, 84  
*Amia calva*, 43  
Amphibia (amphibian)  
    analysis of, 210  
    human use of, 238, 347  
    in Hypothetical Collection, 156  
    morphology, 40, 42, 43, 44, 46, 60–62,  
        370  
    standard measurements, 382  
    taxonomy, 35  
vernacular names, 33

- Ananas comosus*, 84
- Anas platyrhynchos*, 292, 295
- Anatidae, 54
  - anchovy, 53, 54, 137, 138, 272, 348
  - anglerfish, 79, 92
  - Anguillidae, 90
  - Anomura, 62
  - Anser anser*, 7, 292
  - Anseriformes, 90
  - Antilocapra americana*, 62
  - Anura, 59, 382
  - Apis mellifera*, 292, 301
  - Arachis*, 86
  - Ara macao*, 301
  - Arcidae, 122
  - Arctica islandica*, 77
  - Ardeidae, 60, 104, 123, 123
  - Ariidae, 197, 198, 204, 205
  - Ariopsis felis*, 204, 205, 210
  - ark, 122
  - armadillo, nine-banded, 17, 58, 60
  - Arthropoda, 40, 45, 117, 139, *see also*
    - Crustacea; Malacostraca; Maxillopoda
  - Artiodactyla (artiodactyl)
    - analysis, 212, 237, 238, 253
    - antler and horn, 62
    - dentition, 52, 93, 174, 176
    - identification, 166
    - as taphonomic agents, 135
    - weight, 65
  - ass, African wild, 291
  - ass, domestic, 115, 115, 291, 295, 301, 310
  - Astacidae, 375
  - Atherinopsidae, 104
  - auk, great, 16
  - aurochs, 15, 292
  - aurochs, Indian, 292
  - Aves (bird)
    - analysis of, 203, 210, 212, 237, 244, 253
    - anatomy, 39
    - capture techniques of, 268
    - folk taxonomy, 33
    - function and structure of hard tissue, 45–63
    - habits and habitats, 272
    - human use of, 275, 301, 345, 347
    - in Hypothetical Collection, 156, 173
    - locomotion, 54–60, 59
    - morphology, 40, 42, 60–64, 364
  - other hard tissue, 62–63
  - seasonal growth, 74–79
  - sex, 79–80
  - and site-formation processes, 138, 203
  - size, 64–67, 68
  - size and age, 70–73
  - standard measurements, 380
  - taxonomy, 35
  - baboon, 54
  - bacteria, 93, 139, 140, 143
  - Bagre marinus*, 205, 210
  - Bairdiella chrysoura*, 156, 205
  - Balistidae, 61
  - bamboo, 92
  - banteng, 301
  - barley, 293
  - barnacle, 40, 45, 46, 54, 138, 163, 265
  - barnacle, goose, 45, 138
  - barracouta, 328
  - barracuda, 53
  - bass, sea, 68
  - bass, striped, 371–372
  - bat, 59, 93
  - beans, 86, 96, 349
  - bear, 52, 58, 81–82, 93, 98, 133
  - bear, American black, 90, 166
  - bear, cave, 15, 81–82
  - beaver, American, 48, 52, 52, 135
  - bee, honey, 292, 301
  - beetle, carpet, 380–381
  - Belemnitella*, 83
  - bison, American (buffalo), 15, 66, 120, 275
  - Bison bison*, 66, 275
  - Bivalvia (bivalve)
    - analysis of, 207
    - human use of, 132
    - identification, 163
    - latitudinal diversity, 111
    - morphology, 40, 44–46, 54, 374
    - seasonal growth, 77
    - size, 68
    - standard measurements, 383
  - boar, wild, 291, 304
  - boar, wild Southeast Asian, 291
  - bobwhite, *see* quail
  - Bombyx mandarina*, 292
  - Bombyx mori*, 292, 301

- bonefish, 43
- bony fishes, *see* Actinopterygii
- Boonia impressa*, 149
- Bos gaurus*, 301
- Bos grunniens*, 296, 301
- Bos indicus*, 9–10, 289, 292
- Bos javanicus*, 301
- Bos nomadicus*, 292
- Bos primigenius*, 290, 292
- Bos taurus*, 9–10, 47, 58, 71, 175, 289, 292
  - in Hypothetical Collection, 179
- bottle gourd, 272, 329
- Bovidae (bovid)
  - analysis, 193, 212
  - dentition, 69, 176
  - functional morphology of locomotion, 58
  - horn, 62, 73, 79–80, 164, 295
  - taxonomy, 9, 166, 299
- Bovinae (bovine), 201
- bowfin, 43
- boxfish, 61
- Bromeliaceae, 84
- bromeliad, 84
- bryozoan, 138
- Bubalus arnee*, 291
- Bubalus bubalis*, 291, 295
- Buccinidae, 126
- buffalo, 62, *see also* bison; water buffalo
- Bufo*, 238
- Burhinus bistriatus*, 7, 158
- burro, *see* ass
- Busycon carica*, 383
- Busycon sinistrum*, 126, 127
- butterfly, 33
- Cactaceae, 84
- cactus, 84
- Cairina moschata*, 292, 293
- Callinectes*, 249
- camel, wild, 291
- Camelidae (camelid, camel), 295, 310–311, 326
- camels and dromedaries, domestic
  - Bactrian, 291
  - domestication of, 297, 301
  - dromedary, 291, 296, 301
  - herd animal, 295–296
  - importance of, 301
  - one-humped, 291, 301
  - role of, 295–296, 297, 310
  - two-humped, 291, 301
- Camelus*, 291, 295
- Camelus bactrianus*, 291, 301
- Camelus dromedarius*, 291, 296, 301
- Camelus ferus*, 291
- Canidae (canid), 135, 275, 294
- Canis familiaris*, 7, 48, 58, 290, 291, 364
- Canis latrans*, 329
- Canis lupus*, 98, 290, 291, 294
- Capra aegagrus*, 290, 292
- Capra hircus*, 10, 210, 292
- Capreolus*, 91
- Capreolus capreolus*, 129
- Caprinae (caprine), 166, 175, 176, 177, 204, 210, 211, 212, 217
- Carangidae, 74
- Carassius auratus*, 292, 301
- Carcharhinidae, 43
- Carcharodon carcharias*, 53
- caribou (North American terminology), 15, 79, 80, 92, 193, 225, 230, 232, *see also* reindeer
- Carnivora (carnivore), 53, 80, 135, 136, 301, 326
- cartilaginous fishes, 41, *see also* Chondrichthyes
- Castor canadensis*, 48, 52
- cat, 54, 135
- cat, domestic
  - barnyard animal, 134, 296–297
  - dentition, 48
  - domestication of, 291, 297, 301
  - feral, 330
  - house animal, 295, 296–297
  - importance of, 301
  - introduction of, 310
  - population source, 297
  - in ritual, 297
  - role of, 296–297
  - skin, 242, 275
  - taxonomy of, 291
- cat, wild, 291
- caterpillar, 267
- catfish, 68, 167
- catfish, gafftopsail, 205
- catfish, hardhead, 204, 205
- catfish, sea, 197, 198, 205, 210, 246, 263

- cattle, 9–10, 65
- cattle, domestic, 193, 212
  - Aberdeen Angus, 201
  - age, 72
  - archaeogenetics of, 289
  - beef, 283
  - breed, 179, 201–202, 304, 305
  - bull, 9, 80, 201
  - calf, 103
  - cow, 9, 80, 103, 201
  - dentition of, 47, 175
  - domestication of, 292, 293, 301
  - environmental impact of, 330
  - heifer, 103
  - herd animal, 103, 115, 115, 295–296
  - horn, 303, 305
  - in Hypothetical Collection, 179, 211, 217
  - identification problems, 166, 204
  - importance of, 301
  - introduction of, 314, 331
  - modifications, 242
  - morphology, 58, 71, 303, 304, 305
  - Niatu breed, 304, 305
  - ox, 80, 296, 305
  - polled, 62, 305
  - productivity, 102
  - role of, 310
  - sex, 202
  - size, 303, 331
  - skeletal weight, 65, 186
  - steer, 9, 201
  - survivorship curve, 100–103, 101, 102, 303
  - taxonomy of, 290, 291
  - terminology, 9–10
  - tooth wear, 175
  - zebu, 9–10
    - see also* animal products; domestic animal
  - Caudata, 33, 382
  - Cavia aperea*, 291
  - Cavia porcellus*, 121, 291
  - Cebus*, 300
  - cedar, red, 329
  - Centropomus*, 91
  - Cephalopoda, 45, 132
  - Cervidae (cervid), 58, 176, 238, 263
  - Cervus elaphus*, 32, 125, 128, 129, 130, 131
  - Cetacea, 57, 57
  - cheetah, 64, 299
  - Cheloniidae, 32–33
  - Chelydra serpentina*, 365
  - Chelydridae, 94
  - chenopod, 84
  - Chenopodium*, 84
  - chicken, domestic
    - age, 71
    - barnyard animal, 134, 295, 296–297
    - in China, 296
    - diseases shared with humans, 331
    - domestication of, 292, 297, 301
    - in Hypothetical Collection, 173, 178, 185, 185, 190, 202
    - importance of, 301
    - introduction to Americas, 157–159, 331
    - introduction to Oceania, 325, 345
    - role of, 134, 296–297
    - sacred, 297
    - seasonality, 79
    - size, 303
    - spur, 80, 178
    - taboo, 296
    - temporal significance, 157–158
    - see also* animal products; domestic animal; medullary bone
  - Chiroptera, 59
  - chiton, 40, 44, 104, 163, 204
  - chiton, West Indian fuzzy, 373
  - Chitonidae, 104
  - Chondrichthyes, 35, 36, 40, 42, 42, 45, 49, 55, 57, 68, 133
  - Chordata, 35, 39, 40, 42
  - Cirripedia, 40, 163
  - Cittarium pica*, 104, 123
  - clam, 39, 44, 53, 268, 374
  - clam, hard, 77, 198, 199, 263, 263, 327
    - standard measurements, 383
  - clam, Japanese, 77, 152, 324
  - Clupeidae, 131
  - cobra, African spitting, 368
  - coca, 322
  - cockle, 263
  - cod, Atlantic, 64, 78, 350
  - Coenobita clypeatus*, 62, 123, 123
  - Colubridae, 126
  - Columba livia*, 292, 295
  - Columbidae, 325
  - conch, *see* whelk

- coquina, 89, 320
- coral, 51, 52
- cormorant, 7, 137
- Corylus*, 329
- cotton, 347
- cougar, 64, 88
- coyote, 329
- crab, 39, 40, 45, 49, 51, 62, 163, 249
  - specimen preparation, 381
- crab, Florida stone, 49, 50
- crab, hermit, 62, 123, 123
- crab, land, 63, 91, 99, 376
- crab, swimming, 375
- crane, 60
- Crassostrea rhizophorae*, 104
- Crassostrea virginica*, 65, 68, 163, 383
- crayfish, 45, 49, 375
- Crepidula*, 249
- croaker, Atlantic, 198, 200, 205, 327, 327, 350
- crocodile, West African broad-fronted, 366
- Crocodylia* (crocodilian), 40, 43, 43, 53, 57, 61, 366
- Crocuta crocuta*, 136
- Crustacea
  - analysis of, 203, 206
  - anatomy, 7, 39
  - in Hypothetical Collection, 155
  - identification, 162–163
  - morphology, 44–46, 49, 54, 61, 375–376
  - nomenclature, 37
  - see also* Arthropoda; Malacostraca; Maxillopoda
- Ctenosaura pectinata*, 367
- Cucurbita*, 322
- cuscus, 300
- cuttlefish, *see* squid
- Cynoscion*, 205
- Cyprinodontidae, 156
- Dasyprocta leporina*, 138, 300
- Dasyprocta punctata*, 298
- Dasyurus novemcinctus*, 17, 58
- Decapoda (decapod), 37, 40, 45, 163, 375
  - deer, 58, 62, 79, 91, 310
  - deer, brocket, 91
  - deer, huemal, 91, 326
  - deer, mule, 91–92
- deer, Père David's, 91
- deer, red, 32, 90, 91, 125, 125, 128, 129, 130, 131, 196
- deer, roe, 91, 129
- deer, white-tailed
  - age, 72
  - biology, 79
  - ecology, 89, 91–92
  - food preferences, 298
  - habitat, 331
  - human use of, 326
  - in Hypothetical Collection, 159, 173, 185, 186, 188, 189, 190, 194, 202, 204, 206, 207, 209, 211, 212, 221, 223, 224, 235, 237, 238, 240, 241, 242, 243, 244, 246, 248, 249
  - reproduction, 192
  - tooth wear, 176
  - venison, 252
  - weight, 186, 237, 238
  - see also* age; antler; sex; size
- Delphinidae, 53, 56
- Dermestidae, 380–381
- Dicroidon*, 268
- Didelphis marsupialis*, 300
- dingo, 291
- Dinornis maximus*, 325
- Diodontidae, 51
- Diomedeidae, 60
- Dioscorea*, 329
- dodo, 325
- dog, domestic
  - anatomical drawing, 364
  - breeds, 304
  - bulldogs, University of Georgia, 282
  - burial, 121, 294, 296, 305
  - changes to, 287–288, 304
  - in China, 296
  - consumption of, 242, 294, 296
  - dentition, 47, 48, 305, 312
  - diseases shared with humans, 331
  - domestication of, 291, 293, 294, 301, 303, 310, 312
  - environmental impact of, 330
  - feral, 314, 330
  - food, 272, 294
  - genetics, 294, 310
  - identification of, 212
  - importance of, 295, 301

- dog, domestic (*cont.*)
  - introduction of, 294, 325
  - locomotion, 56, 58
  - morphology, 58, 59, 294, 304, 305, 364
  - nomenclature, 32, 290
  - pathologies in, 311, 312
  - pekingese, 305
  - role of, 7, 282, 294–297
  - skin, 275
  - taphonomic agent, 56, 134–138, 137, 313
  - taxonomy of, 290
  - totem, 282
  - variability, 287–288, 294, 304
  - vernacular names, 32
  - and wolf, 290, 294, 304
  - worked specimens, 133, 296
- dog, New Guinea singing, 291
- dolphin, 56, 166
- Donacidae, 89
- Donax denticulatus*, 320
- donkey, *see* ass
- dove, rock, 292
- dragon, Komodo, 53
- dromedary, *see* camels and dromedaries
- drum, 51, 52, 68, 74, 205, 212
- drum, black, 205, 238
- drum, red, 91, 187, 187, 205
- duck, 54, 57
- duck, domestic, 292, *see also* mallard
- duck, muscovy, 292, 293
- earthworm, 139
- Echinodermata, 39, 40, 43–44, 77, 162
- Echinoidea, 40, 44
- eel, 90, 265
- eel, freshwater, 90
- egret, 104
- Elaphurus davidianus*, 91
- elephant, 47, 49, 52, 67, 166, 296
- elephant bird, 325
- Elephantidae, 49, 328
- Elephas maximus*, 296
- elk (European terminology), 32, 90, 91
- Engraulidae, 53
- Enhydra lutris*, 61
- Ephippidae, 74
- Equidae (equid), 59, 80, 166, 246
- Equus africanus*, 291
- Equus asinus*, 115, 291
- Equus caballus*, 58, 115, 212, 291
- Equus ferus*, 291
- Erethizontidae, 135
- Erythroxylon coca*, 322
- eucalyptus, 92
- Eumalacostraca, 40
- euphorb, 84
- Euphorbiaceae, 84
- Falconiformes, 60
- Felidae (felid), 54, 135
- Felis catus*, 48, 134, 209, 291
- Felis silvestris*, 291
- fishes, *see* Actinopterygii
- Fissurellidae, 104
- flamingo, 54
- flounder, 68
- fly, stable, 321–322
- fowl, red jungle, 292
- fox, Channel Island, 300
- fox, South American, 121, 294
- frog, 40, 44, 57, 59, 91, 238, 370
  - standard measurements, 382
- fungi, 139, 142
- Gadus morhua*, 64
- Galeichthys peruvianus*, 263
- Galliformes, 80
- Gallinago gallinago*, 209
- Gallus gallus*, 71, 185, 292
- gannet, 98
- gar, 40, 42, 61, 207
- Gastropoda (gastropod)
  - analysis of, 208
  - anatomical drawing, 373
  - dye, 134
  - environmental information, 320–321
  - identification, 163
  - morphology, 40, 44, 68, 373
  - seasonal growth, 77
  - specimen preparation, 381
- gaur, 301
- Gazella subgutturosa*, 270
- gazelle, 62, 299
- gazelle, Persian, 270
- Gecarcinidae, 63, 91, 376
- Geomysidae, 58

- Geomys pinetus*, 33
- Gnathostomata, 35
- goat, bezoar, 292
- goat, domestic
  - age, 72, 73
  - angora, 195, 314
  - cashmere, 314
  - dentition of, 175
  - domestication of, 73, 293, 301
  - environmental impact of, 330
  - herd animal, 115, 115, 295–296, 303
  - horn, 303, 305
  - in Hypothetical Collection, 210, 212
  - identification problems, 166
  - importance of, 301
  - introduction of, 310, 311, 314, 331
  - morphology, 58, 303
  - neat cattle, 10
  - size, 303
  - taxonomy of, 9–10, 290, 292
  - see also* animal products; domestic animal
- goldfish, 292, 301
- goose, 7
- goose, domestic, 292, 301
- goose, graylag, 292
- gopher, pocket, 33, 58, 139
- Gopherus agassizii*, 135
- Gopherus polyphemus*, 33, 80, 81, 209
- grouper, 53
- Gruiformes, 60
- guanaco, 291, 326
- guinea pig, domestic
  - burial, 121
  - consumption of, 138
  - domestication of, 291, 293, 298, 301
  - importance of, 301
  - in ritual, 297
  - role of, 7, 295, 296–297
  - size, 303
- guinea pig, wild, 291
- hare, 310
- hare, snowshoe, 99
- hawk, 94
- hazelnut, 329
- heron, 60, 123, 123
- herring, 131, 156, 267
- Heteromyidae, 59
- Hippocamelus antisensis*, 91, 326
- Homo sapiens*, 252
- Hordeum vulgare*, 293
- horse, domestic
  - consumption of, 242
  - dentition, 93
  - domestication of, 291, 301, 302
  - herd animal, 115, 115, 295–296
  - identification of, 212
  - introduction of, 311, 314, 331
  - morphology, 58, 59, 80
  - role of, 296, 310–311
  - stabbing of, 321–322
- horse, wild, 291, 328
- human, 252, *see also* Topical Index
- hummingbird, 93
- hutia, 301
- Hyaenidae, 135, 299
- hyena, 135, 299
- hyena, spotted, 136
- Hystricidae, 135
- ibex, 62, 299
- ibis, 104
- Iguana*, 369
- iguana, spiny-tailed, 367
- Insecta (insect), 5
  - agents of environmental change, 316
  - anatomy, 39
  - environmental indicators, 320–322
  - grubs, 138
  - larva, 321–322, 329
  - morphology, 51, 61–62
  - recovery of, 149
  - as taphonomic agents, 142
- Invertebrata (invertebrate)
  - analysis of, 164
  - anatomical drawing, 373–376
  - ecology of, 93, 109
  - as evidence for past environmental conditions, 319, 323
  - functional morphology, 44–45, 54, 60–62
  - human use of, 255, 347
  - larval stages, 91
  - pathology, 170
  - seasonal growth, 74–79
  - size and age, 70, 73
  - specimen preparation, 381

- Ischadium recurvum*, 104
- Isolobodon portoricensis*, 301
- jack, 74
- Juniperus silicicola*, 329
- kangaroo, 52, 59
- killifish, 156, 166
- kingfish, 166, 205
- koala, 92
- Labroidei, 35
- Lacertilia (lizard), 43, 367, 381
- Lagenaria siceraria*, 272
- Lagomorpha, 7
- Lama glama*, 54, 291
- Lama guanicoe*, 291, 326
- Leiostomus xanthurus*, 205
- Leopardus pardalis*, 300
- Lepadidae, 45
- Lepisosteidae, 40
- Lepisosteus*, 61
- Leporidae, 48
- Lepus americanus*, 99
- lichen, 106
- limpet, 40, 104, 138, 265
- lion, 98
- liptooth, 151
- Littorina irrorata*, 203
- Littorinidae, 68
- lizard, 40, 43, 138, 367, 369
  - standard measurements, 381
- lizard, dicroidon, 268
- lizard, varanid, 135
- llama, 308, 309
  - dentition, 54
  - disease, 309–310
  - domestication of, 291, 293, 301, 312
  - environmental impact of, 313
  - herd animal, 115, 115, 295–296, 307, 313–314
  - importance of, 301, 313–314
  - pack animal, 295, 296, 307, 309, 313–314, 322
  - ritual, 121, 306, 307, 313
  - taxonomy of, 291
    - see also* animal products; domestic animal
- lobster, 39, 40, 45, 132, 163
- Lontra canadensis*, 57
- Lophiiformes, 79
- Lutjanidae, 53
- Lutjanus griseus*, 91
- macaw, scarlet, 301
- mackerel, 53, 56
- Macropodidae, 52
- maize, 84, 96, 307, 322, 345, 349
- Malaclemys terrapin*, 209, 209
- Malacostraca, 40, 45, 375
- mallard, 292, 295, 301
- Mammalia (mammal)
  - age, 265
  - analysis of, 164, 203, 210, 212, 237, 244
  - anatomy, 39
  - capture techniques, 268
  - dentition, 170, 195
  - as evidence for past environmental conditions, 328
  - feeding strategy, 93
  - human use of, 257, 275, 347
  - in Hypothetical Collection, 156
  - isotopes, 84, 86
  - locomotion, 54–59
  - morphology, 40, 42, 42, 43, 44, 51–54, 60–64, 364
  - nomenclature, 35
  - recovery of, 156
  - richness, 111
  - seasonal growth, 74–79
  - sex, 79–80, 178
  - and site-formation processes, 138, 203
  - size, 64–67, 67, 68
  - size and age, 70–73, 72
  - standard measurements, 380
  - structures used in feeding, 46–48, 47, 48, 49, 263
  - trophic level, 93
- mammoth, woolly, 15, 325, 328
- Mammuthus primigenius*, 325
- Mammutidae, 328
- manatee, West Indian, 49, 52, 56
- mangrove, 104
- Marmota monax*, 90
- Marsupialia (marsupial), 300
- mastodon, 328
- Maxillopoda, 40, 45
- Mazama*, 91
- Megalonychidae, 328

- Megalops atlanticus*, 43, 43
- Meleagris gallopavo*, 8, 202, 292
- Meleagris ocellata*, 202
- Melonginidae, 126
- Menippe mercenaria*, 49, 50
- Menticirrhus*, 166, 205
- Mercenaria*, 77, 327, 383
- Mercenaria campechiensis*, 74
- Mercenaria mercenaria*, 198, 199, 263
- Meretrix lamarkii*, 77, 324
- Meretrix lucoria*, 77, 152
- Metroxylon sagu*, 329
- Micropogonias undulatus*, 198, 200, 205, 327
- Microtini, 48
- millet, 84
- Mirounga angustirostris*, 98
- mite, 5, 320
- moa, great, 325
- mole, 56, 58, 217
- Mollusca (mollusc)
  - analysis, 164, 203, 204, 206, 208, 210
  - anatomy, 39
  - dietary contribution, 234
  - as evidence for past environmental conditions, 320, 323, 345
  - as evidence of residential pattern, 265
  - human use of, 275, 347
  - in Hypothetical Collection, 155, 168, 246
  - identification of, 162, 165, 204
  - morphology, 40, 44–45, 51–54, 60–62, 373–374
  - nomenclature, 37
  - predation, 122
  - processing techniques of, 274
  - recovery of, 156
  - seasonal growth, 74–79, 176
  - size and age, 73–74, 187, 192, 198
  - specimen preparation, 381
  - standard measurements, 383
  - structures used in feeding, 46
- monitor lizard, *see* Komodo dragon
- monkey, capuchin, 300
- Monodon monoceros*, 47–48
- moonsnail, 122
- moose (American terminology), 32, *see also* elk
- Morone [=Roccus] saxatilis*, 371–372
- Morus bassanus*, 98
- moss, 106
- moth, silk, domestic, 292, 301
- moth, silk, wild, 292
- mouflon, Asiatic, 292
- mouse, 135, 298, 301, 310, 330
- mouse, house, 152, 398
- mouse, kangaroo, 59
- mudsnail, eastern, 68
- Mugil*, 198, 205
- Mugil cephalus*, 104
- mullet, 104, 156, 197, 198, 204, 205, 272
- murex, 122, 134
- Muricacea, 122
- Muricidae, 122
- Muridae, 135
- Mus musculus*, 152, 298
- mussel, 109, 132
- mussel, hooked, 104
- Mustelidae (mustelid), 98, 135
- Myliobatidae, 51
- Mysticeti, 46
- Mytilidae, 109
- Naja nigricollis*, 368
- narwhal, 47–48
- Nassarius obsoletus*, 68
- Naticidae, 122
- nerite, 89, 104
- Neritidae, 89
- Neverita duplicata*, 68
- oca, 322
- ocelot, 300
- octopus, 45, *see also* squid
- Odobenus rosmarus*, 48
- Odocoileus*, 91–92
- Odocoileus hemionus*, 91–92
- Odocoileus virginianus*
  - antler growth, 79
  - dentition, 176
  - garden hunting, 298
  - in Hypothetical Collection, 159, 173
- Odontoceti, 53
- odostome, impressed, 149
- opossum, common, 300
- orchid, 84
- Orchidaceae, 84
- Oryctolagus cuniculus*, 100, 291, 295, 310

## 500 SYSTEMATIC INDEX

- oryx, 299
- Oryza sativa*, 84
- Osteichthyes, 34, *see also* Actinopterygii
- Osteolaemus tetraspis*, 366
- Ostraciidae, 61
- otter, Nearctic river, 57
- otter, sea, 61, 64
- Ovis aries*, 10, 290, 292
- Ovis canadensis*, 275
- Ovis orientalis*, 290, 292
- owl, 94
- Oxalis tuberosa*, 322
- oyster, 69, 77, 149, 164, 239, 246
- oyster, Caribbean, 104
- oyster, eastern, 65, 68, 163, 275, 320, 323
  - standard measurements, 383
- paca, 298
- pademelon, dusky, 300
- palm, sago, 329
- panda, giant, 92
- Pandanus*, 345
- pandanuss, 345
- Panicum miliaceum*, 84
- panther, 64, *see also* cougar
- Panthera leo*, 98
- Papio*, 54
- parrot, 60, 94
- parrotfish, , 272
- parrotfish, stoplight, 34, 35, 35, 36, 53
- parrotfish, yellowtail, 36
- Passer domesticus*, 330
- pea, 86
- peafowl, 80
- peanut, 86
- Pecari tajacu*, 298
- peccary, collared, 298
- Pectinidae, 132
- Pelecypoda*, 44, 373, 383
- Penaeus*, 50, 104
- penguin, 57, 60
- perch, silver, 156, 205
- Perciformes (perciform), 35, 68
- Perissodactyla (perissodactyl), 52, 166
- periwinkle, marsh, 68, 203
- petrel, 57
- Phalacrocoracidae, 7
- Phalacrocorax*, 137
- Phalanger orientalis*, 300
- Phascolarctos cinereus*, 92
- Phaseolus*, 86
- Phaseolus vulgaris*, 96
- pheasant, 80
- Phoenicopteridae, 54
- pig, domestic
  - age, 72
  - barnyard animal, 295–296, 297, 312
  - in China, 296
  - dentition of, 48, 49, 52, 54, 170, 175, 203, 204
  - domestication of, 291, 293, 301
  - environmental impact of, 313, 330, 331
  - feral, 100, 314, 331
  - food habits, 93
  - in Hypothetical Collection, 217
  - identification of, 203, 204, 212
  - importance of, 100, 301
  - introduction of, 310, 311, 314, 325, 331
  - Middle White breed, 305
  - morphology, 58, 58, 80, 304, 305, 363
  - in Oceania, 345
  - pickled pigs feet, 215
  - pork, 283, 348
  - role of, 7, 296–297, 311
  - size, 303
  - skeletal weight, 65
  - taphonomic agent, 134–135, 136
  - taxonomy of, 291
  - tooth wear, 175
  - weight, 65
  - see also* animal products; domestic animal
- pigeon, 325, 329
- pigeon, domestic, 292, 295, 301
- pigeon, wild, 292
- pineapple, 84
- Pinguinus impennis*, 16
- Pinnipedia, 57
- piranha, 53, 55
- Pisaster ochraceus*, 109
- Pisces, 35
- Pisum*, 86
- plankton, 54, 84, 91, 99–100, 107
- Platax*, 75
- Pleuronectiformes, 68
- Pogonias cromis*, 205, 238
- Polygyra*, 151
- Polyplacophora, 40, 44, 373

- porcupine, 268
- porcupine, New World, 135
- porcupine, Old World, 135
- porcupinefish, 51, 61
- porgy, 49, 51, 52, 68
- porpoise, 53
- Portunidae, 375
- potato, 307, 314, 322
- Primate, 52, 60, 80, 135
- Procellariiformes, 57
- Procyonidae, 52
- pronghorn, 62
- protozoa, 93
- Pseudalopex [= Dusicyon] sechurae*, 121
- Psittacidae, 60
- puma, *see* cougar
- Puma concolor*, 64
- Python*, 369
- python, 369
- quahog, 77, 78, *see also* hard clam
- quahog, ocean, 77
- quahog, southern, 74
- quail, 80
- rabbit, 7, 48, 52, 59, 93, 135, 217
- rabbit, domestic, 291, 295, 301
- rabbit, European, 100, 291
- raccoon, 52, 58, 93, 135, 217, 294
- rail, 325
- Rallidae, 325
- Rana*, 238
- rangia, Atlantic, 78, 327
- Rangia cuneata*, 78, 327
- Rangifer tarandus*, 79
- Ranidae, 44, 370
- Raphus cucullatus*, 325
- rat, 134, 135, 136, 217, 298, 301, 330
- rat, black, 190, 191, 298
- rat, New Guinea, 300
- rat, Norway, 190, 191, 298
- rat, Old World (Eurasian), 8
- rat, Polynesian, 300
- rat, rice, 323
- Rattus exulans*, 300
- Rattus norvegicus*, 8, 190, 191
- Rattus praetor*, 300
- Rattus rattus*, 8, 190, 191
- ray, 43, 44, 156
- ray, eagle, 51
- reindeer, domestic (European terminology), 80, 92, 295–296, 301
- Reptilia (reptile)
- analysis, 203, 210
- feeding behavior, 93
- function and structure of hard tissue, 43, 46–63
- hibernation, 90
- human use of, 347
- in Hypothetical Collection, 156
- locomotion, 54–59
- morphology, 40, 42, 43, 43, 44, 60–64, 365–369
- and site-formation processes, 135, 138, 203
- size, 64–67
- standard measurements, 381
- taxonomy, 35
- rhinoceros, 15
- rice, 84
- Rodentia (rodent), 32, 33, 49, 52, 80, 93, 135, 137, 138, 268
- see also* guinea pig; Microtini; mouse; Muridae; rat
- Saccharum*, 84
- salamander, 33, 40
- standard measurements, 382
- see also* pocket gopher
- salmon, 90, 262
- Salmonidae, 90
- sandpiper, 209
- scallop, 132
- Scaphopoda, 40, 44
- Scaridae, 35, 36
- Scarus viridis*, 34–35, 35
- Sciaenidae, 51, 68, 205, 212
- Sciaenops ocellatus*, 91, 187, 205
- Sciuridae, 135, 138
- Sciurus carolinensis*, 329
- Scolopacidae, 209
- Scombridae, 53
- sea lion, California, 98, 268, 272
- seal, 57
- seal, northern elephant, 98
- seatrout, 205

## 502 SYSTEMATIC INDEX

- sea urchin, 39, 44, 45, 46, 50, 51, 61, 64, 91, 104, 132, 265
- sedge, 106
- Serpentes, 43, 207, 368–369, 381
- Serranidae, 53, 68
- Serrasalmus*, 53, 55
- shark, 43, 43, 44, 46, 133, 156
- shark, white, 53, 206
- shark eye, 68
- sheep, bighorn, 275
- sheep, domestic
  - age, 72
  - dentition of, 175
  - domestication of, 292, 293, 301, 312
  - environmental impact of, 330
  - herd animal, 115, 115, 295–296
  - horn, 303, 305
  - in Hypothetical Collection, 210
  - identification problems, 166
  - importance of, 301
  - introduction of, 310, 311, 314, 331
  - morphology, 58, 303
  - neat cattle, 10
  - polled, 62, 305
  - size, 303
  - skeletal weight, 65
  - taxonomy of, 9–10, 290, 292, 294
  - weight, 65, 225, 232
  - see also* animal products; domestic animal
- shrew, 66, 67, 310
- shrimp, 39, 40, 45, 49–50, 104, 148–149
- Sigmodontinae, 323
- Siluriformes, 68, 167, 204
- silverside, 104
- Sirenia (sirenian), 57
- slippersnail, 249
- sloth, giant ground, 328
- snail, 39, 44, 62
- snail, land, 138, 139, 149, 151–152, 320–321
- snake, 40, 43, 53, 57, 68, 90, 152, 207, 368–369
  - standard measurements, 381
- snake, nonpoisonous, 126
- snake, pit viper, 53, 126, 208, 209, 209
- snapper, 53, 104
- snapper, gray, 91
- snipe, common, 209
- snook, 91, 104
- Solanum*, 322
- sorghum, 84
- Sorghum vulgare*, 84
- Soricidae, 66
- spadefish, 74, 75
- Sparidae, 49, 68
- Sparisoma*, 35
- Sparisoma rubripinne*, 36
- Sparisomatinae, 35
- Sparisoma viride*, 34, 35, 36, 53
- sparrow, English or house, 330
- Spermophilus*, 90
- Sphenisciformes, 57
- Sphyraenidae, 53
- spider, 320
- Spisula solidissima*, 77
- Spondylidae, 134
- Spondylus calcifer*, 320
- spot, 205
- Squamata, *see* Lacertilia; Serpentes
- squash, 322, 349
- squid, 44, 132
- squirrel, 135, 138
- squirrel, gray, 329
- squirrel, ground, 90
- starfish, ochre, 109
- starling, 330
- Sterna*, 98
- Sterna paradisaea*, 90
- stingray, 268
- Stomoxys calcitrans*, 321–322
- Strigiformes, 94
- sturgeon, 61, 265, 328
- Sturnus vulgaris*, 330
- sugarcane, 84
- Suidae (suid), 49, 80
- surfclam, Atlantic, 77
- surgeonfish, 167
- Sus domesticus*, 7, 48, 58, 170, 175, 291–292, 363
- Sus scrofa*, 291–292
- Sus scrofa vittatus*, 291
- swine, *see* pig
- Tagelus plebeius*, 68
- tagelus, stout, 68
- Talpidae, 56
- tarpon, 43, 43, 91, 104
- tern, 98
- tern, Arctic, 90

- Terrapene carolina*, 61, 90
- terrapin, diamondback, 209, 209
- Testudines, 57, 61, 133, 178, 381
- Testudinidae, 61
- thick-knee, double-striped, 7, 158
- thorny-oyster, Pacific, 134, 320
- Threskiornithidae, 104
- Thylogale brunii*, 300
- Thyrsites atun*, 328
- toad, 40, 59, 91, 138, 152, 238
  - standard measurements, 382
- topsnail, West Indian, 104, 123, 123
- tortoise, 61, 299
- tortoise, desert, 135
- tortoise, gopher, 33, 80, 81, 90, 249, 265, 320
  - in Hypothetical Collection, 178, 209, 209
- Trachycardium procerum*, 263
- Trichechus manatus*, 49, 56
- triggerfish, 61, 167
- Trionychidae, 79
- Triticum aestivum*, 84
- Trochilidae, 93
- turkey, 8, 80, 173
- turkey, domestic, 292, 293, 295, 301
- turkey, ocellated, 202
- turkey, wild northern, 202, 292, 331
- turtle, 40, 41, 42, 46, 57, 60–61, 68, 80, 207, 244, 262, 365
  - standard measurements, 381
- turtle, eastern box, 61, 80, 90
- turtle, sea, 32–33, 57, 80, 138, 166, 261
- turtle, snapping, 94, 365
- turtle, softshell, 79
- tuskshell, 44
- ungulate, *see* Artiodactyla; Perissodactyla
- Urocyon littoralis*, 300
- Ursidae, 52
- Ursus americanus*, 90
- Ursus spelaeus*, 81
- Vanilla*, 84
- vanilla, 84
- Varanidae, 135
- Varanus komodoensis*, 53
- Vertebrata (vertebrate)
  - anatomical drawings, 363–372
  - anatomy, 39
  - directional terms, 363
  - as evidence for past environmental conditions, 319, 323
  - human use of, 255
  - in Hypothetical Collection, 165
  - identification, 168
  - locomotion, 54–59
  - morphology, 42–44, 60–62, 93
  - nomenclature, 35
  - seasonal growth, 74–79
  - size and age, 70, 73
  - specimen preparation, 380–381
  - standard measurements, 380–382
- Vicugna pacos*, 121, 291
- Vicugna vicugna*, 64, 291
- vicuña, 64, 291, 326
- Viperidae, 53
- vole, 48
- walrus, 48
- wapiti, North American, 32, *see also* red deer
- water buffalo, Asian wild, 291
- water buffalo, domestic, 291, 295–296, 301, 310, 313
- weasel, 98, 135, 310
- whale, 54, 57, 57, 138
- whale, baleen, 46, 107
- whale, toothed, 44, 53
- wheat, 84, 293
- whelk, 126, 134
- whelk, knobbed, standard measurements, 383
- whelk, lightning, 126, 127
- wolf, 99, 304
- wolf, gray, 98, 290, 291, 294
- woodchuck, 90
- wrass, 35
- yak, 296, 301
- yam, 329
- Zalophus californianus*, 98
- zamia, 329
- Zamia integrifolia*, 329
- Zea mays*, 84, 96, 322

## TOPICAL INDEX

*Page references to figures and tables are italicized.*

- abiotic processes, 119, 134, 139–145
- Aborigine, 329
- accession number, 158
- acculturation, 280
- activity area, 213, *see also* archaeological context
- actualistic study, 22, 28, 143–144
- adaptation
  - biological, 79
  - cultural, 10, 13–14, 18, 20–21, 29
- adenine, 81
- aerobic condition, 140
- aestivation, 90
- Afghanistan, 303–304
- Africa, 3, 4, 144, 193, 226, 347
  - and domestic animals, 101, 102, 102, 158, 291–292, 293, 295, 296, 305, 310, 330, 331
- age, 166, 192–199
  - absolute, 72, 74, 77, 172, 192, 196, 266
  - anatomical features of, 54–56, 62–63, 69–74, 158, 164, 172–179
  - classes, 72, 153, 172, 182, 192–199, 264
  - and cranial sutures, 60, 72, 172–173, 196
  - at death, 28, 75, 77–78, 173, 176, 192, 193, 196, 197, 200, 263, 266, 278, 309
  - with determinate growth, 70–73, 79–80, 193–196
  - distribution, 101–102, 309
  - and domestication, 297, 303, 304, 306–310, 312
  - and environmental reconstruction, 319, 322, 323, 324, 350
- epiphyseal fusion, 70–73, 71, 72, 172, 173–174, 180, 184, 193–195, 195, 232, 263
- estimation of, 154
- with indeterminate growth, 73–74, 79, 197–198
- and MNI, 206, 210, 210
- and morphology, 54–56, 60, 62–63, 164, 172
  - relative, 72, 74, 172, 196
- response to stress, 318
- and seasonal growth, 74–79
- and sex, 65, 172, 174, 178, 194, 199, 202
  - and size, 65, 69–74, 180, 183–185, 186, 197–198, 238
- structure, 100–103, 194
- and subsistence strategies, 267
- tooth development, 43–44, 72–73, 171, 172, 174, 195, 196
- tooth eruption sequence, 72–73, 172, 174, 193, 195–196, 263, 309
- and tools, 185
  - see also* antler; increments; sex; size; tooth wear
- aggregation of animals, 98, 254
- Aitutaki Island, Southern Cook Islands, 328
- Alaska (USA), 3, 225, 273
- Albarella, U., 168
- Aleutian shell mound (USA), 3, 15, 15
- Ali Kosh (Iran), 3, 305
- allec, 132
- Allen, M. S., 328
- Alligator Ware, 283
- allometry, 66–69, 67, 234–235, 235, 236, 238

- dimensional, 187, 187, 234, 235
- formula, 68, 187, 187, 235, 236, 239, 241
- power function, 239
- see also* biomass; estimate of body dimension; estimate of dietary contribution; isometric relationship
- Alps, 90
- altitude, 84, 86, 106, 255, 318
- Amazon Basin, 3, 322
- Ambient Inhalable Reservoir (AIR), 83, 85, 86
- American Fisheries Society, 34, 37
- Americas, 2, 4, 8, 348
  - and domestic animals, 291–292, 293, 294, 296, 311
  - post-Columbian colonization of, 100, 158, 311, 330, 331
- anadromous, 90, 262
- anaerobic condition, 140
- analogy, 39, 45, 266, 267, 343–344
- Anasazi (Colorado, USA), 3, 298
- anatomical drawing
  - bass, 371–372
  - bird, 59, 364
  - chiton, 373
  - clam, 374
  - cobra, 368
  - crab, 375, 376
  - crayfish, 375
  - crocodile, 366
  - dog, 364
  - frog, 370
  - gastropod, 373
  - iguana, 367, 369
  - mammal foot, 58
  - pig, 363
  - python, 369
  - sea urchin, 45
  - turtle, 365
  - whale, 57
- anatomical region, 216–219
- anatomy, 31, 38–41, 40
  - directional terms, 46, 363
  - invertebrate, 44–45, 49–50, 61–62, 73–77
  - structure and function in, 38–39, 45, 54, 56
  - vertebrate, 42–44
  - anatomical variation, 63–80
- Andes, 3, 88, 121, 134
- and domestic animals, 291–292, 297, 298, 308, 309, 310–311, 313–314
- exchange systems, 320, 322
- slaughter traditions, 126
- Anglo-Norman, 283
- Anglo-Saxon, 312
- animal attribute, 272, 279, 280
- animal husbandry
  - and agriculture, 314
  - anatomical features of age and sex, 172, 199
  - artifacts of, 270, 301, 313
  - culling, 326
  - environmental impact of, 330–331, 349–350
  - and ethnoarchaeology, 144
  - and residue on tools, 274
  - and zooarchaeological research, 5, 287, 330, 348
  - practices, 103, 306–307, 311–312
- see also* domestic animal; pathology; tools
- animal products, 275–276, 348
  - blood, 86, 103, 192, 306
  - bone, 230, 233, 295, 348
  - bone meal, 215
  - brain, 6, 215, 233
  - bristle, 296
  - building material, 7, 275, 295
  - candles, 95, 133, 276
  - cheese, 314
  - and domestic animals, 295–297, 300
  - down, 275
  - dung, 7, 295, 314, 321–322
  - egg, 6, 296, 348
  - fat, 7, 95, 133, 225, 232, 274
  - feather, 5, 32, 61, 275, 296, 301, 348
  - fertilizer, 7, 295, 314
  - fiber, 296, 313, 314
  - fuel, 7, 132, 254, 295, 314
  - fur, 32, 127, 215, 275, 295
  - gelatin, 7, 204
  - glue, 7, 133, 204, 215, 275, 348
  - grease, 133, 204, 226, 230, 274, 275, 348
  - hair, 5, 7, 41, 192
  - hide, 5, 7, 127, 215, 233–234, 295, 331, 348
  - honey, 84
  - jelly, 274
  - lubricant, 133, 275
  - manure, 7
  - marrow, 56, 226, 227, 230, 232, 233, 274

- animal products (*cont.*)
  - milk, 86, 95, 103, 192, 295–296, 306, 310, 314, 348
  - and nutrition, 95–97
  - oil, 7, 95, 133, 204, 274, 275–276
  - organ meat, 95, 215
  - pigment, 275
  - plaster, 295
  - pomade, 275
  - powder horn, 295
  - progeny, 306
  - services, 295–296, 306, 348
  - shampoo, 275
  - sinew, 268
  - skin, 32, 61, 233–234, 275
  - and technology, 266
  - tongue, 233
  - turtle shell, 133
  - viscera, 6, 233
  - waterproofing, 133
  - wool, 7, 103, 192, 295, 306, 314, 344
  - yogurt, 314
  - see also* antler; horn; meat; nutrition; tools
- animal roles
  - in agriculture, 296
  - burden-bearing, 7, 103, 213, 243, 295–296, 297, 306, 310, 312, 313, 344
  - ceremonial, 281–284, 285, 348
  - companionship, 248
  - guard animal, 7
  - nonfood, 7, 10, 25–26, 203, 213
  - recreation, 281
  - sacred, 297
  - service, 103, 295
  - as social marker, 278–285, 335, 348
  - traction, 7, 103, 243, 295–296, 306, 310
  - transportation, 243, 344
  - walking larder, 301–302
  - and zooarchaeological research, 7, 286, 297, 310–311, 335, 348
  - see also* animal products; domestic animal; ritual; tools
- annual cycle, 79, 89, 260, 266
- Antarctic, 90
- Antelope House (Arizona, USA), 321
- anthropological theory, 12–14
  - cultural ecology, 12, 13–14, 18, 20
  - functionalism, 18, 20, 25
- ecological anthropology, 12, 13–14, 20, 21, 29
- environmental determinism, 12, 26, 317
- environmental possibilism, 13–14, 17, 29
- historical ecology, 12, 29
- historical particularism, 13
- human ecology, 14, 345, 346, 347, 350–351
- postprocessualism, 26
- processualism, 20, 25
- structuralism, 20–21, 25–26
- symbolic anthropology, 20–21, 26
- Antilles, 3, 299, 300–301, 322, 348
- antler
  - and age, 196
  - anatomical features of, 64, 73, 172
  - biological characteristics of, 47, 62
  - human use of, 6, 127, 133, 233–234, 275
  - and seasonality, 79, 178, 263
  - sexual dimorphism, 80, 200
  - velvet, 62, 79
  - see also* animal products; element types
- apatite, 85, 118
- Arabia, 291–292
- ragonite, 39, 61, 63
- archaeobotany, 30, 386
- archaeogenetics, 28, 29, 80–82, 244, 288–290, 344, 350, *see also* DNA; genetics; genome
- archaeological context
  - base camp, 265
  - burial, 25, 146, 147, 192, 262, 282, 296, 305
  - butchery, 22, 23
  - camp, 25, 120, 255, 258
  - ceremonial, 134
  - closed, 264
  - column sample, 147
  - commercial, 225
  - consumption, 22, 23, 204, 225
  - crypt, 140, 143
  - and domestication, 299–300
  - and environmental reconstruction, 322
  - extractive, 255, 264, 265
  - and first-order changes, 124, 134
  - feature, 147, 264
  - fishing station, 25, 120, 265
  - footing trench, 147
  - hearth, 147, 264
  - home base, 259, 299
  - house, 9, 147, 264
  - informal structure, 264

- kill, 9, 22, 23, 120, 146, 200, 204, 215, 225, 226
- latrine, 136, 140, 321
- long-term, 120–121
- midden, 9, 147, 203, 264, 321, 329
- and MNI, 209
- monument, 279, 347
- mound, 16, 329
- processing, 120, 204
- residential, 120–121, 146
- rural, 215, 277–278
- and second-order changes, 206, 209, 210, 213, 216
- sheet refuse, 147, 155, 264
- social, 225
- storage, 9, 147, 208, 264, 275, 299, 330
- systemic, 123–124, 134
- temple, 9, 147, 282
- and temporal periodicity, 264–265
- temporary camp, 258, 264
- tomb, 294, 305
- trash deposit, 155, 264
- types of deposits, 120–121
- urban, 121, 134, 208, 215, 245, 249, 252, 254, 277–278, 322, 329
- village, 25, 25, 121, 215, 264
- well, 121, 140, 147, 155
- zone, 264
- and zooarchaeological collection, 385–386
- and zooarchaeological research, 8, 18–20, 22, 157, 252, 284, 294, 343, 346
- archaeozoology, 4–5
- Archaic Period, 258
- Arctic, 90
- Argentina, 3, 304
- Arizona (USA), 3, 145
- Armitage, P. L., 190
- artifact, 5, 9, 16, 145, 274
- artiodactyl index, 166, 205
- Asia, 19, 291–292, 293, 294, 296
- assemblage, definition, 9
- attribution, 161, 164–167, 378, *see also* identification
- Australia, 2, 3, 100, 134, 269, 328, 330, 331
- Australopithecine, 249
- Avebury (England), 321
- Ayacucho (Peru), 3, 307
- Bahamas, 35–36
- Baker, F. C., 18
- baleen, 41, 54
- Bardach, J. E., 35
- basal metabolism, 255, 260
- Bassett, E., 137
- bauplan, 38–39
- behavioral archaeology, 22
- behavioral strategies, 22, 23, 155, 227
- Behrensmeyer, A. K., 142, 170
- belief system, 5, 7, 25–26, 28, 252, 281–283, 285–286, 348
- Bering Straits, 294
- Binford, L. R., 22, 23, 207, 224, 225–227, 230
- binomen, 34, 290
- binomial, 33
- binominal, 33
- bioarchaeology, 4
- biochemical analysis, 27, 80, 82–86
- biogeography
  - and domestication, 299–300, 310–311, 319, 330–331, 348
  - and environmental reconstruction, 318–320, 322, 324–325
  - exotic animals, 280
  - response to stress, 318
  - and subsistence strategies, 260–261
  - and zooarchaeology, 1, 8, 17, 29, 116, 166
- biological anthropology, 2, 386
- biological ecology, 14
- biomass
  - aggregation, 239
  - in food webs, 107
  - sample biomass, 211, 236, 238, 239, 241, 245–246
  - see also* allometry; estimate of dietary contribution
- biome, 106, 107, *see also* ecosystem
- biostratinomy, 122
- biotic processes, 119, 123, 134–139, 143–145
- bioturbation, 5, 124, 134, 139
- Black Sea, 3
- Blitzkrieg, 329
- blood
  - protein, 80
  - residue, 5, 274–275, 349
- Boas, F., 13
- Bobrowsky, P. T., 4

- bogs, 140
- Bökönyi, S., 206, 207
- Bonaire (Netherlands Antilles), 3, 300
- bone
  - and abiotic processes, 140–141
  - acellular, 55, 74
  - cancellous, 55–56, 70–71
  - cartilage-replacement, 55
  - cellular, 74
  - center of ossification, 70–71
  - compact, 55–56, 172
  - composition of, 39
  - density, 56, 136, 243, 275
  - dermal, 17, 55, 60–61
  - endochondral, 55, 70
  - Haversian, 55
  - immature, 55, 172
  - increments in, 76
  - inorganic component, 39–41, 41, 84–85
  - and isotopes, 84–85, 87
  - lamellar, 55, 56
  - membrane, 55, 60
  - nonvascular, 55
  - organic component, 39–41, 41, 84–85
  - primary lamellar, 55
  - primary vascular, 55
  - secondary lamellar, 55
  - trabecula, 56, 70–71
  - in vertebrate locomotion, 54–56
  - woven, 55
  - in zooarchaeology, 7, 345
  - see also* raw material
- bone count, *see* number of identified specimens
- Bonnaterre, P. J., 34–35
- Brain, C. K., 232
- breakage unit, 161, 216
- British Isles, 321, *see also* England
- Bronze Age, Early, 305
- Broughton, J. M., 328
- Brusca, G. J., 44
- Brusca, R. C., 44
- buffer zone, 98–99
- Burma, 296
- butchery
  - methods, 16, 22, 28, 153, 166, 167, 213, 232, 242–243, 293
  - modifications associated with, 125–130, 141, 242–243
  - and NISP, 203
  - primary, 126, 128, 130, 243, 272, 274
  - secondary, 126, 128, 130, 272, 274
  - skill, 242, 274
  - tertiary, 126, 272, 274
  - unit, 216–219, 220–227, 272, 274
  - waste, 136–137
  - see also* modifications; tools
- Butler, V. L., 328
- calcite, 39, 61
- calcium
  - carbonate, 39, 46, 49, 50, 61, 63, 78
  - as a component of hard tissue, 39, 61–62, 141
  - as a nutrient, 94, 97
  - phosphate, 39, 97
  - and strontium, 86–87
- California (USA), 3, 18, 131, 300, 328
- campaign-style archaeology, 19
- Canada, 3, 37, 155, 269
- cannibalism, 99
- captive animals, 73, 296, 299–301
- Caribbean, 3, 32–33, 91, 134, 155, 328, 331
- carrying capacity, 24, 99–100, 245, 255, 259–260
- cartilage, 41, 54–55, 70–71
- Casas, Bartolomé de las, 299
- Casas Grandes (Chihuahua, Mexico), 3, 301
- Casteel, R. W., 239
- catadromous, 90
- catalogue number, 159
- catchment area, 25
  - and environmental reconstruction, 319, 320, 322
  - site-catchment analysis, 24, 213, 257
  - in subsistence strategies, 254, 257–261, 299, 344, 347, 349
- cave, 140, 143, 321
- cementum, 41, 46, 47, 76, 176, 193, 196, *see also* increments
- Central America, 158
- central-place theory, 24
- Ceramic Age, 328
- ceremony, *see* ritual
- Channel Islands (California, USA), 3, 300

- Chaplin, R. E., 167, 193, 194, 206, 207, 237, 249
- charm, 7
- chemical, organic, 81, 94
- Chihuahuan Desert (Mexico and USA), 3, 259, 301
- China, 291–292, 293, 296, 310
- Chiriquí (Panama), 283
- chitin, 39, 49, 61–62
- chromosome, 81–82, 289
- chronology, 15, 17–18, 29
- cirri, 54
- clade, 82, 289, 291, 294
- Clarke, D. L., 22
- Clason, A. T., 153, 168
- class, 33–34, 35, 37, 39, 42–45, 54, 55, 56
- Cleland, C. E., 245
- climate
  - and environmental reconstruction, 316, 318, 319
  - as an abiotic process, 140
  - as an environmental factor, 72, 76, 110, 266, 277
  - change, 5, 183, 260
- cognition, 281–283
- collagen, 39, 55, 84–86, 96, 118, 142
- collection, definition, 9, *see also* reference collection; zooarchaeological collection
- colonization, 8, 25, 100, 280, 294, 300, 311, 314, 325, 330, 348
- Colorado (USA), 3, 298
- commensal relationship, 100, 103, 118, 137–138, 151, 213–215, 242, 262, 298, 329–330
- common name, 9–10, 32–33, 37
- community ecology
  - abiotic, 106
  - and applied zooarchaeology, 332
  - biotic, 104
  - connectance, 107, 109
  - ecosystem structure, 88–89, 103–113, 108, 114
  - heterogeneity, 110–113
  - mutualism, 103
  - and zooarchaeology, 18
- see also* commensal relationship;
  - competitive relationship; diversity; ecosystem; equitability; food web; population ecology; predator-prey relationship; productivity; richness; similarity measure; symbiotic relationship; trophic level
- competitive relationship, 103, 330
- complex societies, 28
- computers, 160, 176, 207
- conchiolin, 39, 61
- conjunctive approach, 18, 19
- connective tissue, 54–56
- conservation, 6, 29, 331–334
- Cook Islands (Polynesia), 3, 273, 328, 345
- Coppergate (York, England), 3, 136
- coppice, 324
- coprolite, 5, 6, 46, 136–138, 256, 262, 321, 345
- corrected frequency, 224, 225, 226, 229, 229
- corrected number of specimens (CSI), 260
- cost, 280
  - cost-benefit analysis, 24
  - energetic, 22–24, 98, 253–255, 257, 266, 343–344
- see also* Jochim's model
- courtship display, 54, 64, 302
- Crabtree, P. J., 242
- crassulacean acid metabolism (CAM), *see* photosynthetic pathways
- Cruz-Uribe, K., 206, 207, 213, 227, 249
- ctenidia, 54
- cuisine, 251, 278, 335
  - traditional Mexican, 349
- cultural filter, 5, 6, 26, 245, 317
- cultural resource management, 20, 26, 30, 377
- cultural transformation processes, 123–125, 134
- culture, 9
  - areas, 13
  - change, 6, 245, 260
  - continuity, 6
  - core, 13
  - definition of edible, 16, 38, 233, 237, 256, 279
  - definition of value, 215, 219, 280, 344
  - and domestication, 347, 348
  - and environment, 12–14, 316–317, 323, 335, 349–350
  - history, 14, 17–18, 29, 252
  - maintenance, 285
  - patrimony, 161, 390, 393
  - secondary features, 13
  - and subsistence strategies, 251–252
- cumulative frequency graph, 195, 196
- curation, 18, 26, 146, 153, 154, 178, 297, 342

- curation (*cont.*)
  - collection-management policies, 393–394
  - environment, 394
  - facility, 389, 393
  - long-term, 393–395
  - of notes and records, 377, 389–390, 393–394
  - protocols, 387, 389
  - of reference specimens, 381, 393
  - of studied archaeological specimens, 377, 387–391, 393–394
  - of unstudied archaeological specimens, 377, 393–394
  - curio, 206
  - cytosine, 81
- Dahl, G., 103
- daily cycle, 24, 89, 260
- Dall, W. H., 15
- Dalzell, P., 328
- data
  - access to, 390, 394–395
  - archival, 158, 389–390
  - curation of, 389–390, 393–395
  - modern age, 73, 192–193, 196
  - modern biogeographical, 266
  - modern fisheries, 322–323
  - modern food value, 226
  - modern growth, 77–79
  - modern observations, 182–183
  - modern sex, 200, 201
  - modern size, 186
  - modern weight, 234, 238
  - standard measurements, 64–65
  - see also* primary data; secondary data
- Davis, S. J. M., 168, 207, 287
- death assemblage, 118, 119, 183, 249, 263–264
- decomposition, 109
- dedicatory reviews, 11
- de facto refuse, 124
- deforestation, 325
- de la Vega, Garcilaso, 325–325
- demography, animal, 263, 327
- dendroclimatology, 319
- dendrogram, 82
- Denmark, 3, 125, 128, 129, 130, 131, 201
- density
  - density-dependent factors, 99–100
  - density-independent factors, 99–100
  - of resources, 99–100, 254–255
- dental formula, 47–48
- dentine, 39, 41, 47, 47, 72–73, 76, 176
- deposited assemblage, 118–120, 119, 183, 249
- dermis, 61
- desert, 140, 143
- diagenesis, 83, 86, 122, 144
- diagnostic zone, 163, 164, 165, 172, 217
- Diamond, J. M., 293
- diaphysis, 70–71, 71, 168, 173–174, *see also* age
- diastema, 48, 52, 52
- dichotomous key, 38
- diet
  - breadth, 24
  - defined, 251
  - dietary requirements, 94–98, 97, 251
  - and isotopes, 82, 83, 84–87
  - norms of food consumption, 278, 280–281
  - nutrition and diet, 255–257
  - and subsistence strategies, 252, 298
  - and zooarchaeological research, 16, 20, 153, 247, 249
  - see also* nutrients; nutrition
- disasters, 316, 319
- disease, animal
  - and dentition, 195
  - in domestic animals, 297, 307, 312
  - and the environment, 316
  - evidence for, 170
  - related to size and age, 69, 72
  - see also* pathology
- disposal, trash, 8, 132, 136, 145, 203, 208, 213, 242, 259, 264
- diversity
  - in community ecology, 103
  - definition, 110, 111
  - and food web, 109
  - local (alpha), 100
  - niche breadth, 245–246, 247
  - and productivity, 110–113
  - quantification of, 156
  - regional (gamma), 110
  - and sample size, 151
  - Shannon-Weaver function, 111, 112, 112, 247
  - Shannon-Weiner function, 111
  - in subsistence strategies, 260, 275, 298
  - turnover of species (beta), 102, 110
  - see also* equitability; evenness; richness

- DNA (deoxyribonucleic acid), 5, 34, 80–82, 144, 274–275, 386
  - ancient DNA (aDNA), 81–82, 118, 182, 288–289
  - mitochondrial DNA (mtDNA), 81–82, 288–289, 294
  - nuclear DNA (nDNA), 80–82, 289
    - see also* archaeogenetics; genetics; genome document, *see* written record
- domestic animal, 2, 7, 16, 17, 28, 100, 115, 115, 290, 293, 344
  - barnyard, 293, 295, 296–297
  - breed, 36, 65, 73, 189, 201–202, 291
  - free-ranging, 193
  - herd, 255, 293, 295–296, 330–331
  - house, 293, 295, 296–297
  - introduction and spread of, 28, 87, 302–303, 310–311, 325, 331, 348
  - pet, 7, 216, 281, 300, 301
    - see also* animal husbandry; pathology; Systematic Index
- domestication, 287–288, 291–292
  - behavioral features, 268, 287–288, 290, 301–302, 304
  - capture and control, 298–299
  - castration, 73, 201–202, 268, 304, 306, 307, 312
    - centers of, 293, 302–303
    - change in faunal composition, 311
    - change in proportion, 302–305, 312
      - and coat color, 287, 298, 305–306
    - confinement, 243, 302–303, 311–312
      - and conformation, 183, 186, 202, 297, 302, 304–305, 331
    - evidence for, 184, 189–190, 215, 297, 302–314
    - features of age and sex, 72–73, 172, 192
      - and genetics, 81–82, 288–289, 305–306
      - and health, 28, 243, 311–312
      - history of, 1, 28, 29, 291–292, 293, 303, 305, 310–311
      - impact on culture, 295–296, 348
  - inbreeding, 312
    - and isotopes, 83
  - major domestic species, 291–292, 301
    - methods of study, 297–310
      - and modifications, 243–244
      - morphology, 288, 289, 290, 297, 302, 311
      - phenotypic features of, 305
      - physiological features of, 73, 301–302
      - and plant cultivation, 293, 298, 310, 311, 314, 330–331
      - polling, 268, 305, 312
      - process of, 290, 297–307
      - range extension, 299–300
        - and site-catchment analysis, 24
      - slaughter schedule, 103
      - and subsistence strategies, 260
      - and taming, 299–301
        - taxonomy of, 290, 291–292
        - timing of, 293, 303
        - unintentional, 298–299
      - and zooarchaeological research, 5
        - see also* Systematic Index; taxonomy
    - Driver, J. C., 161
    - Eaton, G. F., 16
    - ecofact, 5
    - ecological analogy, 143, 182–183, 266, 320–322, 343
    - ecology, 13–14, 21, 29, 31, 251, 297, 332
      - definition, 88–89
      - methods, 113–115
        - see also* community ecology; population ecology
    - economies
      - and behavior, 253–255
      - and domestic animals, 311
      - and environmental change, 319
      - and isotopes, 82
      - and social organization, 252, 276, 280
      - and social systems, 254–255
      - and zooarchaeological research, 1, 4, 5, 13, 24, 27–28, 169, 213, 344, 348
    - ecosystem, 8, 84, 86, 90, 105, 106, 108, 109, 110, 115–116, 316, 330, 347, 349
      - aquatic, 104, 106, 109
      - definition, 104
      - estuary, 104, 105, 106
      - island, 303, 310, 324–325

- ecosystem (*cont.*)
  - marine, 84, 85, 106
  - model, 109
  - processes, 327
  - structure, 103, 104–107
  - temperate, 84, 90, 106, 296
  - terrestrial, 84, 85, 104, 106, 107, 107
  - tropical, 84, 104, 105, 106, 296
  - see also* community ecology; ecology; population ecology
- ecotype, 36
- Ecuador, 3, 268, 294
- edentate, 46, 94
- edge effect, 329
- edible meat, 233–237
  - meat weight, 27, 233–235
  - summary, 240–242
  - total live weight, 66, 233–237
  - usable meat, 233–234
- Efremov, J. A., 117, 123
- egg shell, 5, 46, 61, 63
- Egypt, 3, 297, 299, 305
- Ein Mallaha (Israel), 3, 294
- element, archaeological, definition of, 9, 161
- element representation
  - anatomical region, 161, 163, 205, 217, 217, 218, 219
  - and butchery, 127
  - and edibility, 234
  - as primary data, 153, 158, 161–164
  - portion, 161–163, 216, 219–220, 220, 223
  - skeletal elements, 216–217
  - summary figure, 163
  - symmetry, 161, 163, 206–208, 219–220, 224
  - and trade, 278
  - see also* identification
- element types, 127, 168, 364–376
  - aperture, 69, 77, 163
  - apex, 163, 208
  - Aristotle’s lantern, 40, 44, 45, 46, 50, 162
  - astragalus, 7, 71, 180, 184, 201, 295
  - atlas, 187, 187, 197, 198, 222
  - baculum, 80, 178
  - beak (bill), 40, 46, 94
  - carapace, 40, 41–42, 46, 60–61, 208, 365
  - carpal, 58, 59, 215
  - carpometacarpus, 59, 59
  - cheliped, 40, 45, 49, 50, 50, 51, 62, 163
  - clavicle, 60
  - claw, 50, 58
  - cleithrum, 74
  - columella, 163, 208
  - coracoid, 60
  - cranium, 40, 46, 60, 215
  - dactyl, 49, 50
  - dentary, 44, 48, 49, 52, 53, 54, 55, 350
  - dermal bone, 60–61
  - dermal denticle, 61
  - dermal scute, 60–61
  - endocranum, 74
  - epiplastron, 80, 81, 178
  - femur, 57, 60, 186
  - fibula, 58
  - frontal, 60, 62
  - humerus, 57, 58, 59, 128, 184, 185, 192
  - hypoplastron, 209
  - ilium, 40
  - interhaemal, 75
  - mandible, invertebrate, 46, 49–50, 51, 62, 163
  - mandible, vertebrate, 52, 72–73, 127, 139, 174
  - maxilla, 44, 72–73, 174, 350
  - metacarpus, 58, 59, 65, 66, 180, 201
  - metapodia, 58–59, 127, 133, 215, 228, 295
  - metatarsus, 58
  - operculum, 44, 75, 77
  - otic capsule, 41, 56
  - palatine, 44
  - parietal, 60
  - pedicel, 62, 80, 178
  - pelvic girdle, 57, 60, 139
  - phalanx, 58–59, 58, 59, 127, 215, 222
  - pharyngeal grinding mill, 44, 52, 53
  - plastron, 41, 46, 60–61, 80, 178, 365
  - premaxilla, 44, 52, 53, 54
  - propodus, 49, 50
  - pterygiophore, 74, 167
  - pterygoid, 44
  - pyramid, 45
  - quill, 268
  - radius, 58–59, 58, 59
  - rib, 56, 60–61, 74
  - scale, 4, 5, 61, 75, 77
  - scapula, 60, 125, 125, 130, 139, 242, 295
  - shell plate, 40, 44, 46, 163
  - spine, 61, 75, 75, 77, 162, 167, 268

- spur, 80, 178
- sternum, 60, 129
- synsacrum, 60
- tarsal, 58, 215
- tarsometatarsus, 60, 80
- test, 45, 61, 162
- tibia, 71, 129, 192, 312
- tibiotarsus, 60
- ulna, 58–59, 58, 59, 133
- vomer, 44
- see also* antler; horn; mollusc valve; tooth; vertebra
- El Niño/Southern Oscillation (ENSO), 333
- El Paraiso (Peru), 3, 347
- elver, 90–91
- Emeryville (California, USA), 3, 18, 328
- enamel, 39, 41, 46, 47, 52, 52, 87, 141, 170, 176, 195, 203
- enamel hypoplasia, 170–171, 170, 256
- endemic, 378
- endolymphatic fluid, 63
- energy, 109
  - conservation, 253
  - flow, 28, 104–105, 109
  - management, 252, 266, 285, 343–344
- England, 3, 154, 312, 321
- environmental archaeology, 4
- environmental change
  - anthropogenic, 316, 318, 323, 324–331, 334, 349–350
  - archaeological evidence for, 316–317, 323
  - causes of, 317–319, 333–334
  - and domestication, 290, 303, 313–314, 325, 329–331
  - extinction, 1, 17, 29, 116, 317, 322, 325, 328–329
  - extirpation, 116
  - and harvesting effort, 325–326
  - and humans, 14, 259–260, 324–334, 335, 346
  - and island ecosystems, 324–325
  - mining and smelting, 316
  - and niche breadth, 245
  - nonanthropogenic, 316, 318, 323, 333, 334
  - overexploitation, 29, 78, 92, 183, 259–260, 326–328, 334
  - and seasonal growth, 77
  - and zooarchaeological research, 1, 29, 279, 316–317, 344
- environmental reconstruction, 320–323
  - caveats, 319–320, 333
  - goals of, 317–318
  - and habitat requirement, 320–321
  - and modern analogues, 266
  - and zooarchaeological data, 316–317, 323–324, 332–334
  - see also* landscape
- environmental stasis, 316, 317
- environmental stress, 69, 76–77, 318
- enzymes, 94, 96, 97, 310
- epidermis, 41, 55
- epiphyseal plate, 70–71
- epiphysis, 70–71, 71, 168, 173–174, 180, 193, 309, *see also* age
- equitability, 110–113, 112, 245
  - definition, 112
  - Sheldon formula, 247
  - see also* diversity; evenness; richness
- Ertbølle culture, 125
- escargot, 138
- estimate of body dimension, 154
  - allometric, 69, 186–187, 187
  - comparison with reference specimen, 185–186
  - ratio diagram, 187–189, 189, 190
  - ratios, 65, 185–186, 190–191, 191, 200–202, 201
  - as secondary data, 182, 183–191
  - see also* age; allometry; sex; shoulder height; variation
- estimate of dietary contribution, 27
  - allometric, 69, 234–235, 235, 238–239, 236, 240, 241, 241
- comparison with reference specimen, 234, 235, 239, 240–241
  - for individuals, 210, 235, 235, 240, 241
  - for whole animals, 234–237, 235, 240
  - from the literature, 235, 238, 240
  - from measurements, 234–235, 235, 240
  - as secondary data, 183, 233–242, 249, 278
  - using specimen weight, 211–212, 235–239, 235, 236, 240–241
- summary, 240–242
- weight method, 236, 237
  - see also* age; allometry; biomass; minimum number of individuals; number of identified specimens; sex; specimen weight; variation

- ethical standards, 377, 390
- ethnicity, 28, 126, 213, 215, 242, 245, 280–281, 348, *see also* social institutions
- ethnoarchaeology, 9, 22, 144–145, 343–344
- ethnographic analogy, 8, 145, 232, 267–268, 343–344
- ethnographic observation, 6, 144–145, 183, 232, 252, 267–268, 274, 343–344
- ethnozoology, 4
- Eurasia, 2, 4, 100, 291–292, 293, 295, 314, 328, 330, 331
- slaughter traditions, 126
- Europe, 17, 134, 158, 291–292, 294, 295, 305, 310, 329
- Evans, J. G., 25–26
- evaporation, 106
- evenness, 245, *see also* diversity; equitability; richness
- evolution, 15, 32, 39, 54, 55, 82, 332
- evolutionary ecology, 14
- excavation procedures
  - arbitrary or metric stratigraphy, 208, 385
  - definition of contexts, 385
  - location of units, 146–147, 242, 284
  - and MNI, 208–209, 209, 212
  - natural stratigraphy, 208, 316, 385
  - provenience, 158
  - records, 160, 385–386
  - screen size, 136, 147–150, 149, 155, 156, 156, 184, 197, 204, 284, 342, 347, 385
  - and secondary data, 203, 204, 206, 208
  - as second-order change, 118, 141, 146–151, 385
  - standardization, 156, 346–347
  - and zooarchaeological collection, 250, 344–348, 377, 384–385
  - and zooarchaeological research, 8, 18, 22, 27, 343
  - see also* first-order changes; modifications; sampling protocol; second-order changes; site-formation processes
- exchange systems, 276–278
  - and domestic animals, 290, 293, 310, 311
  - and elements represented, 161, 213
  - and environmental reconstruction, 318, 320, 322
  - and identification, 164
  - and isotopes, 83
- market, 208, 215, 277–278
- and modifications, 168
- and NISP, 167, 203, 204
- reciprocity, 277–278, 284
- redistribution, 126, 200, 232, 277–278, 307, 326
- response to overexploitation, 326
- and social role of animals, 279
- and technology, 267
- and temporal periodicity, 261, 265, 266
- trade, 6, 18, 82, 87, 134, 158, 215, 242, 255, 258, 260, 278, 295, 300–301, 331, 344
  - and zooarchaeological research, 24, 28
- exoskeleton, 39, 40, 41, 49–50, 51, 61–62, 70, 163
- expected number of individuals, 223–224
- experimental archaeology, 8–9, 132, 134–135, 143–144, 343–344
- family, 34, 35, 38, 52, 110
- famine food, 345
- faunal succession, 5
- fecal steroids, 256, 349
- feces, *see* coprolite
- feeding behavior, 297
  - browser, 51, 87, 92–93, 313–314
  - carnivore, 48, 50–53, 84, 85, 86, 87, 92, 98, 107, 301
  - decomposer, 109
  - detritivore, 92, 107
  - frugivore, 51
  - generalized, 37, 58, 92
  - granivore, 93
  - grazer, 50–51, 84, 87, 92–93, 313–314, 330
  - herbivore, 46, 48, 50–52, 73, 84, 85, 86, 87, 92–93, 99, 104, 107, 272, 298, 329
  - insectivore, 51
  - nectarivore, 51, 93
  - omnivore, 48, 50–54, 87, 92, 301, 347
  - piscivore, 51
  - scavenger, 51, 118, 134, 136, 137–138, 216, 294, 296, 298
  - specialized, 37, 53, 54, 92
  - suspension feeder, 51, 53–54
    - see also* functional morphology of feeding; tooth; trophic level
  - feral animals, 73, 100, 193, 310, 314–315
  - Fertile Crescent (southwest Asia), 3, 17, 291–292, 293, 303–304

- fields, agricultural, 255
- Field Sample number (FS#), 160, 220, 220
- fire, 106, 267, 316, 324, 329, 350
- first-order changes, 117, 118–120, 122–143
  - abiotic, 119, 119, 139–143
  - biotic, 119, 119, 134–139
  - conditions promoting preservation, 143, 345
  - and environmental reconstruction, 317, 319, 323
  - and primary data, 161, 169
  - and secondary data, 208, 237
  - and zooarchaeological research, 26, 27, 143–145, 153, 161, 274, 346
- see also* excavation procedures; modifications; second-order changes; site-formation processes; soil
- fish sauce, 131–132
- flipper, 57, 57, 58
- Florida (USA), 3, 348
  - southern, 126, 134
  - southwestern Florida, 3, 323
- Florida Museum of Natural History, 186
- folk knowledge, 31
- food
  - consumption norms, 280–281
  - exchange, 5, 9, 24, 145, 208, 237, 257
  - meanings, 281–283, 349
  - preference, 91–92, 138, 199, 215, 272, 280–281
  - pyramid, 97
  - sharing, 126, 145, 276, 278
  - and social organization, 278–284
- see also* exchange systems; food preparation; nutrition
- food preparation
  - bake, 131
  - boil, 131, 274
  - cook, 131–132
  - cure, 126
  - dry, 274, 307, 326
  - ethnographic observation of, 145
  - fermentation, 274
  - and fragmentation, 141
  - fry, 274
  - and modifications, 168–172, 242–244
  - and NISP, 203
  - pickle, 274
- preserve, 131–132, 208, 262, 265, 266, 272, 274–275
- process, 272, 274–275, 344
- render, 274
- roast, 131, 274
- salt, 131, 274
- and skeletal frequency, 213–215
- smoke, 126, 131, 274
- and subsistence strategies, 251
- and zooarchaeological research, 16
- see also* butchery; modifications
- foodways, 251, 280–281, 348
- food web, 97, 103, 107–109
  - biomass, 107, 108
  - food chain, 106, 109
  - see also* community ecology; productivity; trophic level
- foraging theory, 22, 28, 326
  - bottom-up processes, 326–327
  - top-down processes, 326–327
- foraging time, 24
- Fore, 33
- form, 36
- forma domestica, 290
- Fort Michilimackinac (Michigan, USA), 3, 348
- Fort Mose (Florida, USA), 213, 214
- fossil, 1, 183, 206
- founder effect, 302
- Fountain of Youth site (Florida, USA), 200
- fowl
  - diseases shared with humans, 331
  - environmental impact of, 330
- fractionation, 78, 84, *see also* isotopes
- fragment
  - cross mend, 167–168
  - definition, 9
  - see also* number of identified specimens
- function, in archaeology, 18–20, 24, 26, 213
- functional morphology of feeding, 46–54
  - capturing, 50–54
  - crushing, 47, 50, 51, 52–53
  - cutting, 47, 52–53
  - filter feeding, 53–54
  - grinding, 47, 50, 52–53
  - holding, 47, 52–53
  - other uses, 54
  - piercing, 47, 50

- functional (*cont.*)
  - shearing, 47, 48, 50, 53
  - suspension feeding, 46, 50, 53–54
    - see also* feeding behavior; tooth
- functional morphology of locomotion, 56–60, 58
- functional morphology of protection, 60–62
- fusion score, 195
- game theory, 22–25
- ganoid scale, 61, 207
- Garbage Project (Tucson, Arizona, USA), 145
- garden hunting, 92, 298
- garum, 132
- gastrolith
  - crustacean, 41, 46, 62, 63
  - lithic, 46
- genealogy, 289
- genetic drift, 203
- genetics, 32, 80–82, 288, 305–306, 310, 386
- genome, 81
- Gentry, A., 290, 292
- genus, 33–36, 35, 38, 110, 290
- geochemistry, 28, 80, 87, 320
- geographic barrier, 36
- Georgia (USA), 3, 148, 149
- Germany, 322
- Gilmore, R. M., 19
- glucose, 95
- glycogen, 95
- grade, 35
- Grant, A., 174, 196
- graphic art, 267, 283, 299, 305, 307, 309, 312, 313, 343
  - figurine, 9, 145
  - mural, 9, 299
  - petroglyph, 9
- gravity model, 24
- Grayson, D. K., 212
- Greenland, 316
- Grouard, S., 328
- growth, 182, 302
  - and age, 70–74, 171, 196
  - allometric, 66–69
  - in birds, 63, 70–71, 173
  - annulus, 75–77, 200
  - arrested, 170–171
  - curves, 65–69, 193
- determinate, 70–73, 79–80, 172–174, 193–197, 238, 263
- and environmental reconstruction, 320
- false annulus, 76–77
- indeterminate, 49, 73–74, 79, 173, 176, 186, 187, 197–199, 239, 263
- linear, 65–66
- in mammals, 173
- response to stress, 318
- seasonal, 28, 74–79, 192, 263
  - see also* age; cementum; increments; size; tooth
- Guadeloupe (Lesser Antilles, West Indies), 328
- guanine, 81
- Guayaki, 145, 329
- Gulf of Cortez, 1, 134
- Gulf of Mexico, 91, 134, 155
- Gulf Stream, 90
- habit, 260–266, 275
  - crepuscular, 261
  - cyptic, 271
  - diurnal, 261
  - nocturnal, 261, 271
- habitat, 261, 275
  - complexity, 110
  - distal, 214, 260, 322
  - heterogeneity, 110, 112
  - preferences, 89–91, 266
  - proximal, 214, 260, 322
- haplotype, 288–289
- Hargrave, L. L., 17, 18
- Harris lines, 256
- harvest profile, 196
- harvesting pressure, 326
- Hayden, B., 284
- Haynes, G., 144
- health, animal, 73, 195, *see also* pathology
- heirloom, 124, 125
- heritage management, 26, 377, 393
- Hesse, B., 224, 226
- hibernation, 90, 262–263
- hierarchy, 33–34, 36, 98–99
- Himalayas, 3, 296
- Hispaniola (Greater Antilles, West Indies), 3, 155, 301, 331
- Hjort, A., 103
- Hohokam Period, 258

- Hoko River (Washington, USA), 3, 143
- Holocene, 317, 320, 323, 324, 332, 334
- homology, 39
- hoof, 41, 61
- hormone, 62, 95
- horn, 5, 295, 305
  - core, 62, 133, 164, 178–179, 179, 275
  - maturity, 73, 172, 196
  - morphology, 62, 179, 312
  - sexual dimorphism, 200, 202, 305
  - sheath, 62, 133–134, 295
  - see also* animal products; element types
- Howard, H., 18
- human
  - biology, 252, 310
  - burial, 17, 121, 149, 160, 262, 282, 294, 296
  - demography, 13, 27, 252, 254–256, 260, 276, 285, 327
  - disease, 27, 256–257, 259, 321
  - and domestic animals, 296, 298, 331
  - fetus and infant, 160
  - genetics, 82
  - health, 252, 255–257, 259, 281–283, 298, 321
  - identification of, 160–161, 166
  - migration, 87, 319
  - morphology, 52, 58, 60, 93
  - mortality, 262
  - as omnivores, 52
  - remains, 27, 30, 82, 161, 171, 256–257, 321, 345, 390
  - sex roles, 251, 280, 281
  - see also* diet; Native American Graves Protection and Repatriation Act; nutrition
- humidity, 255, 320
- hydrology, 106
- hydroxyapatite, 39, 55, 84–85, 141
- hygiene, 321
- hyperostosis, 74, 75
- Hypothetical Collection, 154–155
  - and age, 195, 197, 405
  - applications of allometry, 187
  - and archaeological context, 209, 210
  - comparison of data, 211
  - dietary contribution, 235, 236, 241
  - diversity, 247
  - elements represented, 159, 205, 217, 218, 219, 220, 221, 222, 223
- interpretation of, 246–249
- measurements, 179, 184, 185, 188, 191, 198, 406–407
- modifications, 159, 162, 171, 172, 244, 245, 401
- and primary data, 156–180
- and screen size, 156
- and secondary data, 184–246
- similarity index, 214
- and size, 189, 190
- species list, 396–400
- specimen distribution worksheet, 402–404
- utility indices, 225, 228, 229, 230, 231
- volume density, 233
- Iceland, 350
- iconography, 283, 309
- identification
  - of archaeological specimens, 133, 164–167, 203–204, 206, 333, 378
  - and basic biology, 31, 38
  - of closely related taxa, 82–83, 189–191, 191
  - and elements represented, 161
  - and Hypothetical Collection, 205
  - procedures, 27, 153, 342
  - and second-order changes, 118, 146, 157, 250
  - see also* age; element representation; sex; size; variation
- Iglulik, 269
- Inca, 306, 313, 314, 325–326
- increments, 176, 178, 319
  - and age, 73, 74, 176, 193, 197–198
  - and basic biology, 75–79
  - in cementum, 76–77, 193, 196
  - growth, 73, 74, 166, 172, 193
  - in marine organisms, 77–79
  - mineral density, 77
  - in mollusc valves, 73, 74, 75–78, 176, 199, 263
  - in otoliths, 63, 75, 77–78, 176, 197, 200
  - in pectoral spines, 77
  - seasonal, 77–78, 196, 262, 263, 263
  - see also* age; cementum; growth; isotopes; mollusc valve; otolith; tooth
- index of fragmentation, 204–205
- India, 291–292, 296, 299
- Indian Ocean, 3, 325
- Indus Valley (Pakistan), 3, 293

- information theory, 111, *see also* diversity
- infraorder, 62
- Ingalik, 273
- Ingura, 269
- International Code of Zoological Nomenclature, 34, 290
- International Council of Archaeozoology (ICAZ), 4, 392
- intestinal contents, 136–137
- introduction of animals and plants, 116, 299–301, 324–325, 330
  - see also* biogeography; domestic animal; domestication
- introgression, 289
- Iran, 3, 303–304, 305
- Ireland, 283, 293
- irrigation, 296, 330
- Isaac, G. L., 145
- island effect, 303
- isometric relationship, 69, *see also* allometry
- isotopes
  - carbon, 83–85, 85
  - and environmental reconstruction, 319
  - and first-order changes, 118, 130, 144
  - nitrogen, 83, 85–86, 85
  - oxygen, 78–79, 83, 263, 320, 323
  - stable, 78–79, 82–87, 85, 182, 256–257, 288, 290, 344, 345, 350
  - unstable, 83
- and zooarchaeological research, 5, 27, 262, 274, 349
  - see also* environmental reconstruction; fractionation; minerals; photosynthetic pathways; seasonality
- Israel, 3, 294
- Japan, 293, 324
- Jericho, 3, 305
- Jochim, M. A., 253, 254
- Jochim's model, 253–255
- Jones, D. S., 327
- Jones, K. G., 136
- Jones, K. T., 230
- Jordan, 270
- Junin (Peru), 309
- Kazakhstan, 291–292
- keratin, 39–41, 54, 61, 133, *see also* horn
- keratinized tissues, 54, 60
- kilocalorie (kcal), 95
- kilojoule (kJ), 95
- kingdom, 34
- Kings Bay (Georgia, USA), 3, 148, 149, 199
- kinship, 9, 28, 145, 252, 276, 277
- Kirch, P. V., 114
- kjøkkenmøddinger*, 2
- Klamath, 269, 271
- Klasies River Mouth (South Africa), 3
- Klein, R. G., 206, 207, 213, 227, 249
- Koike, H., 152
- krill, 54
- Kroeber, A. L., 12–13
- K strategy, 100, 101
- Kubasiewicz, M., 237
- Kuri, 305
- lactation, 255
- labor
  - division of, 145, 254, 261
  - reducing, 22
- laboratory procedures
  - archaeological, 385–386
  - and MNI, 206, 208
  - and NISP, 203, 204
  - as second-order changes, 156
  - zooarchaeological, 8, 161, 386–390
- Laguna Blanca Reserve (Argentina), 115, 115
- Lake Chad (north Africa), 3, 305
- land clearance, 124
- landscape
  - change, 277, 313–314, 316, 321
  - land clearance, 329–330, 350
  - and zooarchaeological research, 10, 24
    - see also* environmental reconstruction
- Lapland, 3, 330
- Lapp, 296
- Lartet, E., 15, 16
- latitude, 84, 90, 106, 110, 111, 293, 318
- latitudinal diversity gradient (LDG), 110–111
- laundry list, 13, 164, 183
- Lawrence, B., 19, 20
- legal standards, 377, 390
- Leone, M. P., 29
- life assemblage, 118, 119, 124, 152, 183, 240
- life cycle, 89–90
- life history, 77, 89, 90–91, 99–103, 327–328

- life table, 100–103, 102
- life zone, *see* biome
- light, 106, 109
- Linares, O. F., 92, 298
- lineage, genetic, 289, 291, 293, 294, 310
- linear fit, 65–66, 67
- linear program, 22
- linguistics, 32
- Linnaeus, C., 32, 33, 38, *see also* taxonomy
- literature review, 36–38, 157–158, 231, 266
- locomotion, types of
  - digging, 56, 58
  - digitigrade, 58, 58
  - flying, 56, 57, 59–60
  - hopping, 56, 58–59
  - plantigrade, 58–59
  - running, 56, 58–59
  - swimming, 56–58
  - unguligrade, 58–59, 58
  - walking, 56, 58–59
- London, England, 121
- Loomis, F. B., 16
- Lotka–Volterra equation, 100
- Lower Pecos Region (Chihuahuan Desert, Mexico, USA), 259
- Lubbock, Lord Avebury, 2
- Lyman, R. L., 3, 153, 216, 226–229, 231
- Madagascar, 3, 269, 271, 273
- magic, 279, *see also* ritual
- Maltby, J. M., 243
- Mangaia (Cook Islands), 3, 345
- mantle, 61
- Marean, C. W., 227
- material culture, 114
  - associated with domestication, 313–314
  - association with food preparation, 274, 266
  - and environmental reconstruction, 345
  - and ritual context, 284
  - and subsistence strategies, 252, 262, 266–276
  - and zooarchaeological research, 16, 252, 348
  - see also* raw materials; tools
- %MAU, 227, 228, 229, 229, 230, 231
- Mauritius (Indian Ocean), 3, 325
- Mayer, D., 231
- meal, 132, 284
- measurements
- and age, 197–198, 199
- and domestication, 184, 189, 303–305
- estimate of body dimension, 183–191, 184, 185, 186, 187, 188, 190, 191
- estimate of dietary contribution, 234, 235, 236, 241
- and MNI, 206
- as primary data, 158, 164, 179–180
- and sex, 178, 200–202, 201
- and size, 65
- standard length, 187, 187
- standardized biological dimensions, 65, 186, 186
- standardized zooarchaeological dimensions, 179
- and taxonomic attribution, 166, 191
- and zooarchaeological research, 344, 350
- meat, 348
  - and diet, 86, 225, 226, 230, 232, 257, 306–307
  - and herd animals, 295–296
  - modern cuts, 219
  - and zooarchaeological research, 6, 348
  - see also* animal products
- medicine, 7, 132, 344
- medieval, 350
- Mediterranean, 131, 134, 290, 303, 310
- medullary bone, 56, 63, 80, 178, 263
- megafauna, 317, 328
- Meighan, C. W., 20
- Melanesia, 3, 300
- menu, 251, 278
- Mesoamerica, 96
- Mesolithic site (Denmark), 125, 125, 128, 129, 130, 131
- metabolic pathways, 82–85
- metaphysis, 70
- Metcalfe, D., 230
- Mexico, 19, 134, 158, 259, 291–292, 294, 301, 320
- Michigan (USA), 3, 348
- microorganisms, 140, 142
- microsatellites, 289
- Middle Ages, 134
- middle-range theory, 21–22, 23
- Middle Stone Age sites, 347
- migration
  - and ecology, 90–91
  - and extinctions, 328–329
  - and genetics, 82

- migration (*cont.*)
  - and isotopes, 87
  - long-range pastoral nomad, 258
  - and seasonal growth, 76
  - and subsistence strategies, 260–261, 280
  - transhumance, 258, 260, 295
  - see also* catchment area; seasonality; settlement patterns; subsistence strategies
  - migratory animal, 89–91, 262, 265
- Mills, W. C., 16
- MIND, 206
- minerals
  - alterations to, 130, 144, 386
  - barium, 86
  - copper, 97, 316
  - lead, 316
  - major minerals, 97
  - as nutrients, 94, 96, 97
  - as raw material, 275
  - strontium, 83, 86–87
  - and subsistence strategies, 256–257, 262, 290
  - trace elements, 5, 27, 86, 97, 344, 345, 349, 350
  - see also* calcium; isotopes; nutrients
- minimum number of animal units (MAU), 226–231, 228, 229, 231
- minimum number of elements (MNE), 226–229, 228, 229, 231–232
- minimum number of individuals (MNI)
  - and age, 206–207, 210
  - aggregation, 208
  - and archaeological context, 206, 208–209, 209
  - and cultural behavior, 208, 214
  - and estimates of dietary contribution, 235–237, 235, 239, 240
  - and identifiability, 207–208, 210
  - matched pairs, 152, 206–207
  - maximum distinction method, 208
  - and measurements, 206
  - minimum distinction method, 208
  - and niche breadth, 245, 247, 249
  - and NISP, 208, 212–213
  - and sample size, 113
  - as secondary data, 202, 205–210, 210, 211, 224, 231–232, 233, 278
  - and sex, 206
  - sensu Binford, 23, 207, 226–227
  - sensu White, 20, 207, 210, 224, 227–228, 234
  - and specimen weight, 211
  - and site-formation processes, 206, 208, 212
  - symmetry, 206–208
  - see also* excavation procedures; number of identified specimens; quantification
- Missouri (USA), 79
- mitochondria, 81
- mobility, 24, 172, 257–260, 262, 265, 276
  - see also* catchment area; seasonality; settlement patterns
- Mochica vessel, 307, 309, 312, 313
- modifications
  - abrasion, 122, 128
  - blow, 127, 128, 130, 170, 243
  - burned, 124, 132, 170, 180, 242, 245
  - butchering, 122, 124, 126–130, 171, 244, 278
  - calcined, 132
  - chemical, 124
  - chop, 127–128, 129, 170, 172
  - clean-cut, 130
  - columnar, 169
  - cooking, 130–132
  - cut, 128–129, 129, 170, 172, 243
  - digestion, 136–137, 170, 243
  - fracture, 169
  - as primary data, 158, 168–172
  - as secondary data, 182, 216, 234, 242–244, 275
- fragmentation, 125, 127, 138–139, 141–142, 154, 161, 163, 168, 169, 203, 205, 210, 242–243, 275
- gnawed, 122, 124, 130, 135–136, 170, 243
- gnawed by carnivore, 128, 137
- gnawed by human, 135
- gnawed by rodent, 137, 172
- groove and snap, 130, 169
- hack, 127–128, 129, 170, 172, 243
- illustrations of, 169
- impact, 127
- irregular break, 169, 169
- killing, 125–126
- mastication, 136–137
- oblique, irregular, 169, 169
- oblique, regular, 169
- predation, 122–123, 123, 126, 127
- preservation, 130–132
- puncture, 169, 169

- recent, 170
- root-etching, 139, 142
- saw, 130, 170, 172, 243
- saw, metal, 130, 243
- saw, non-metal, 130
- sawtoothed, 169
- scrape, 128, 130, 170, 243
- skinning, 126–127, 242–243
- slaughter, 125–126
- slice, 128
- spiral fracture, 127, 136, 142, 169–170, 383, 384
- spiral, irregular, 169
- spiral, regular, 169
- splintered, 169, 169
- stepped, 169, 169
- trample, 124, 138–139, 141, 143, 170, 243
- transverse, 169
- transverse, irregular, 169
- transverse, regular, 169
- weathering, 142, 170, 384
- worked, 28, 133–134, 169, 285, 300, 386
- see also* food preparation; pathology; tools
- moisture, 109, 140, 260
- mollusc valve
  - color, 32
  - and environmental reconstruction, 320
  - increments in, 176
  - length, 186, 198
  - and MNI, 207
  - morphology, 40, 41, 45
  - as raw material, 133
  - seasonal growth, 74, 75–79
  - shape, 164
  - and site-formation processes, 141
  - weight, 65, 239
  - see also* increments
- molt (ecdysis), 62
- Mongolia, 291–292
- Morlot, A. von, 2
- morphology, 17, 31, 32, 297, *see also* anatomy
- mortality rate, 101–102
- mutualism, 103, 306, 315
- Nagaoka, L., 328
- nail, 41, 61
- Native American Graves Protection and Repatriation Act (NAGPRA), 390
- Native Americans, 311
- natural area, 13
- Near East, 291–292
- neoteny, 304
- Netherlands Antilles (West Indies), 3, 300
- Netherlands, The, 17
- Neusius, S. W., 298
- New Britain (Melanesia), 3, 300
- New England (USA), 78, 313
- New Guinea, 3, 33, 277, 296, 329
- New Ireland (Melanesia), 3, 300
- Newsom, L. A., 328
- New Zealand, 49, 100, 328
- niche, 39, 318
  - breadth, 14, 24, 28, 182, 245–246
  - definition, 89
- NMI, 206
- Noddle, B. A., 73
- Noe-Nygaard, N., 125, 127
- normal distribution, 113
- North America, 32, 90, 144, 145, 275, 320, 328–330, 331
- northwest Pacific Coast (North America), 3, 262, 267, 269, 271, 277
- notochord, 42
- nucleus, 81
- number of identified specimens (NISP)
  - and age, 195, 197
  - and estimates of dietary contribution, 233
  - and MNI, 206, 208
  - observed to expected ratios, 222, 223
  - and niche breadth, 245
  - and recovery methods, 149
  - and relative frequency of taxa, 212–213
  - and skeletal portions, 216–217, 230–232
  - and specimen weight, 211
  - and utility indices, 226, 227
  - as primary data, 158, 167–168
  - as secondary data, 202–205
  - see also* minimum number of individuals; modifications; quantification; specimen weight
- number of remains (NR), 167
- Nunamiat, 225
- nursery ground, 64, 323
- nutrients, 22, 106, 109
  - amino acid, 96, 349
  - calories, 24, 95

- nutrients (*cont.*)
  - carbohydrate, 85, 94, 95
  - cellulose, 95
  - cholesterol, 85
  - energy, 94–95, 280
  - essential nutrients, 94, 96
  - fat, 63, 85, 94, 95, 254, 280
  - fatty acid, 85, 349
  - fiber, 95
  - lipid, 80, 85, 95, 274
  - mineral, 94, 97, 254
  - oil, 95
  - phospholipid, 95
  - protein, 39, 85, 86, 94–96, 254, 257, 274
  - starch, 95
  - sterol, 95
  - sugar, 81, 95, 274
  - triglycerides, 95
  - vitamin, 94, 95, 96–97, 254, 274
  - water, 94, 95, 254
  - see also* calcium; kilocalorie; kilojoule; minerals
- nutrition
  - adequacy of, 253, 255, 299, 318
  - and estimates of dietary contribution, 233, 238
  - and growth, 72, 183, 195
  - and isotopes, 82
  - and pathologies, 170
  - requirements, 27, 97–98, 97, 256
  - and seasonal growth, 76–78
  - and skeletal frequencies, 213
  - and subsistence strategies, 251, 252, 254–257, 278, 349, 344
  - and zooarchaeological research, 1, 5, 6, 24
  - see also* animal products; diet
- obituaries, 11
- observed to expected ratio, 219–224, 229
  - anatomical relationship, 222, 223–224, 223, 229
- derived from NISP, 221, 222
  - see also* modifications; number of identified specimens; skeletal frequency
- Oceania, 2, 296, 330
- O'Connor, T. P., 164
- Old Sacramento (California, USA), 3, 131
- Olsen, S. L., 242
- ontogenetic change, 63–64
- optimal foraging theory, 22–25, 253, 332
  - and niche breadth, 245
  - and recovery technique, 150
- oral tradition, 293
- order, 33–34, 35, 36, 52
- ornament, 6, 7, 17, 130, 133–134, 169, 200, 204, 206, 215, 242, 275–276, 295, 296
- ossicle, 61, 77
- osteoarchaeology, 4
- osteocytes, 70
- osteometry, 190
- Oswalt, W. H., 268
- otolin, 63
- otolith
  - constituents of, 41, 63
  - and growth, 75–78, 176, 200
  - and isotopes, 320
  - and measurements, 166, 186, 197, 198, 200
  - and MNI, 210
  - see also* increments; isotopes
- out of the tropics model (OTT), 110–111
- oxygen, dissolved, 77–78, 261, 322
- Ozette Village (Washington, USA), 3, 143
- Pacific Ocean, 109, 134, 310–311, 325, 328, 347
- Paine, R. T., 109
- Paiute, 267, 269
- Pakistan, 303–304
- paleoecology, 148
- paleoeconomic, 345
- paleoenvironment, 1, 4, 29, 116, 345
- paleoethnobotany, 4
- paleoethnozoology, 4
- paleofeces, *see* coprolite
- Paleolithic, 15, 196
- paleontology, 4, 20, 39, 265, 300
- paleonutrition, 345
- Panama, 3, 283
- paradigm lag, 29
- Paraguay, 3, 145, 329
- parasite, 149, 262, 320, 321, 345, 349
- Paris (France), 121
- Parmalee, P. W., 19
- patch choice, 24
- pathogen, 321, 322, 330
- pathology
  - activity patterns, 170, 312

- and age classes, 195, 196
- arthritis, 307, 312
- and bone growth, 55, 73
- congenital, 170, 312
- dental alteration, 312
- and domestication, 307, 311–312
- enterotoxemia, 309
- fracture, 170, 311
- injury, 312
- intentional, 170, 312
- as modification, 124–125
- predation, 31, 170, 309, 331
- as primary data, 158, 170–172
- as secondary data, 242–244
- stress-related, 69, 76, 170–171, 253
- and zooarchaeological research, 17
  - see also* disease; modifications
- Payne, S., 173, 174, 196, 212
- Pee Dee belemnite (PDB), 83
- pellets, regurgitated, 136–139
- percentage similarity, 115, 115, 214
- percentage survival, 222, 224
- periodicity
  - and animal behavior, 76
  - in isotopes, 83
  - in subsistence strategies, 24, 349
    - see also* seasonality
- periosteum, 56, 70–71
- periostricum, 61
- Perkins, D., Jr., 224, 226
- Peru, 3, 19, 263, 268, 310, 313, 320, 329, 333, 347
- Peters, J. L., 37
- photoperiod, 260
- photosynthesis, 109
- photosynthetic pathways, 83–86, 85
- phylogenetic relationship, 34–38, 82, 93, 288–289, 387
- phylogeography, 37–38, 288
- phylum, 34, 35, 37, 39, 41
- phytolith, 93, 318
- Pike-Tay, A., 196
- plants
  - and animals, 93, 310, 314, 330–331, 344, 345
  - bark, 92
  - building material, 344
  - charcoal, 318
  - condiments, 344
  - cultivation, 287, 329–331
    - domestication, 272, 293, 330–331
    - DNA, 82
    - and environmental change, 329–331
    - fruit, 84, 92, 93, 95, 262
    - fuel, 254
    - genetics, 289
    - grain, 84, 95, 97, 330
    - grass, 87, 92, 93, 257, 321, 329
    - gum, 92
    - hay, 321–322
    - herb, 92, 321
    - legume, 83, 84, 86, 95, 97
    - macrobotanical remains, 318
    - nectar, 92, 93
    - nonlegumes, 83, 86
    - nut, 84, 257, 262, 345
    - and nutrition, 95–97
    - root crop, 84
    - seed, 29, 93, 257, 262
    - shrub, 87, 92
      - and site-formation processes, 117–119, 139
      - and subsistence strategies, 255, 261, 347, 349
      - and trophic levels, 92–93, 99
    - tuber, 95, 322, 329
    - vegetable, 84, 95
    - wood, 345
      - and zooarchaeological research, 4, 10, 18, 345–346
  - Pleistocene, 2, 81, 82, 226, 294, 303, 310, 317, 332, 347
  - Pliocene, 82
  - political institutions
    - and animal use, 252, 258, 267, 276, 280
    - and environmental reconstruction, 319
    - and zooarchaeological research, 27–28, 158
  - pollen, 318
  - population ecology, 89–103
    - age structure and survivorship curves, 100–103, 263
    - aggregations of animals, 98
    - energy and nutrients, 94–98, 318
    - and environmental reconstruction, 318, 332
  - food preferences, 91–92
  - habitat preferences, 89–91
  - life history strategies, 89, 99–103
  - social environment, 98–99
  - territories and social hierarchies, 98–99, 297

- population (*cont.*)
  - and zooarchaeological research, 1, 8, 14, 88–89
  - see also* community ecology; ecology; life history; nutrition
- population growth and regulation, 99–100, 331, 332, 349
- logistic curve, 99
- pressure, 100
- population structure, 263
- postdepositional processes, 119, 119, 151–152
  - see also* first-order changes; modifications; second-order changes; site formation processes
- postmedieval, 219
- Post-Pleistocene, 2, 333
- precipitation, 106
- predator-prey relationship, 5, 8, 99–100, 103, 199, 326–327
- presence/absence of indicator species, 318, 319, 323, 326, 328
- prestige, 22, 215, 254–255, 280–281, 348
- prey-choice model, 150, 245
- prey index, 213
- primary data, 336–341
  - anatomical feature of age and sex, 172–179
  - and collection management, 377, 389–390, 393–395
  - element representation, 161–164
  - measurements, 164, 179–180
  - modifications, 168–170, 172
  - number of identified specimens, 167–168
  - pathologies, 170–171
  - quantifying relative abundance, 157
  - recording, 158–160
  - and secondary data, 182–183, 193, 200, 203, 232, 335
  - specimen weight, 180
  - and subsistence strategies, 251, 252, 274–275
  - taxonomic identification, 164–167
  - and zooarchaeological research, 153–154, 249, 341–342, 344
    - see also* secondary data
- primary refuse, 124
- primitive, 37, 43
- procurement strategies, 28, 144, 153, 268
- productivity
  - and community ecology, 103, 109, 110
  - net annual primary productivity, 108
  - and overexploitation, 327
- profane, *see* secular
- publication, 146, 153, 154, 163, 183, 207, 227, 231, 377, 390–393, 389
- Puerto Real (Hispaniola, West Indies), 3, 155, 331
- Puerto Rico, 3, 155, 301
- Pukapukan, 273
- Purdue, J. R., 230
- pursuit time, 24, 255
- quantification
  - and recovery methods, 148–150
  - and relative abundance of taxa, 156–157
  - and sample independence, 151, 156–157, 183, 203
  - and sample size, 151
  - and secondary data, 182
  - and zooarchaeological research, 16, 27, 250
    - see also* minimum number of individuals; number of identified specimens
- Quitmyer, I. R., 198, 327
- race, 36
- raptor, 60
- rarefaction curve, 113–114, 114
- ratio diagram
  - to estimate body size, 187–189, 189, 190
  - for skeletal portion, 223, 223
    - see also* observed to expected ratio
- raw materials, 133–134
  - and domestic animals, 295–297, 300
  - and primary data, 170
  - and skeletal frequency, 215
  - and subsistence strategies, 254–255, 259, 267, 275–276
    - and zooarchaeological research, 7, 22–23
      - see also* animal products; bone; horn; tooth
- reburial, 154, 390
- recombination, 81, 82, 289
- records
  - age classes, 194, 195
  - archaeofaunal, 385, 389–390, 393, 394
  - curation of, 342, 394
  - data cards, 158–160, 159, 173, 388

- diagnostic zone, 163, 165, 217
- element portion represented, 161, 216–217, 219–220, 220
- fusion worksheet, 173
- labels, 384–385, 387, 388
- media, 389–390
- schematic drawing, 162, 163, 173
- specimen distribution worksheet, 173, 217, 402–404
- recovered assemblage, 183
- recovery constant, 204
- recovery methods, *see* excavation procedures
- Reed, C. A., 4, 6, 19, 237–238, 237, 249, 251, 299
- reference collection, 378–383
  - and biological data, 65–67, 185–186, 234, 378–379
  - cataloguing, 381–382
  - collection-management policies, 378, 393–394
  - curation, 377, 381–382, 393–395
  - preparation, 379–382
  - standard measurements, 186, 379, 380, 381, 382, 383
  - and zooarchaeological research, 19, 37, 157–158, 160, 335, 377
- reference literature, 161, 166, 179, 182, 378
- reference specimen
  - and identification, 164
  - as voucher, 378
- regional analysis, 24, 254
  - central-place model, 24
  - gravity model, 24
  - locational analysis, 24
  - see also* catchment area
- relative frequency
  - interpretation of, 212–213
  - RF (relative frequency), 224, 225
  - of taxa, 153, 182, 202–213
  - see also* element representation;
    - identification; number of identified specimens; observed to expected ratio; utility index
- Renfrew, C., 80
- replication, 144, 343–344
- reproduction, 76–77, 192, 260, 318, 319
- rescue archaeology, 20, 347
- residential pattern, *see* settlement pattern
- resource depression, 326
- resource management
  - current, 29, 318, 320, 331–334, 349, 377
  - in the past, 329–330, 332, 334, 344
- richness
  - and community heterogeneity, 110–113, 112
  - definition, 110, 245
  - and latitude, 111
  - and overexploitation, 260
  - and sample size, 151
  - and status, 280
  - and zooarchaeological research, 16
  - see also* diversity; equitability; evenness
- risk, 255
  - of failure, 254
  - management of, 22–24, 257
  - personal, 254, 266
- ritual, 279–285, 285
  - calendar, 258, 281, 307
  - and cultural transformation processes, 125
  - divination, 297
  - and ethnoarchaeology, 145
  - and excavation procedures, 147, 149, 264, 283–284
  - fasting, 283–284
  - feasting, 242, 254, 277, 283–285
  - and food, 277
  - and isotopes, 83
  - mortuary, 121, 262
  - object, 124, 160
  - offering, 121, 132, 147, 242, 294
  - potlatch, 277, 284
  - public and private, 279, 281
  - rite of passage, 160, 264, 282, 284
  - sacred or divine, 279, 282–284
  - sacrifice, 6, 7, 216, 282, 297, 306
  - secular or profane, 279, 282–284
  - and skeletal frequency, 213, 215
  - structure and function, 279
  - and technology, 267
  - use of animals, 290, 294, 296–297
  - and zooarchaeological research, 5, 9, 25–26, 27–28, 332
- Roman deposits, 126, 131, 133–134, 321
- Roman Empire, 316
- r strategy, 99, 101
- Russia, 3, 325
- Rütimeyer, L., 2, 16

## 526 TOPICAL INDEX

- sacred, *see* ritual
- sagitta, 63
- St. Augustine (Florida, USA), 3, 154, 155, 185, 186, 192, 198, 200, 213, 214, 220, 237, 350
- salinity, 77, 84, 106, 322, 323
- Salisbury Plain (England), 3, 321
- Salmon Ruin (New Mexico, USA), 321
- salt, 275
- salt fish, 6
- sample, archaeological
  - assemblage, 119, 124, 183, 240
  - definition, 9
  - number, 385
  - and second-order changes, 146–151
    - see also* curation
  - sample size, 113–114
    - and age class, 195, 197
    - and diversity, 151, 245–246
    - and domestication, 297, 311
    - and environmental reconstruction, 317, 322
    - and primary data, 157, 180
    - and richness, 114, 114, 151
    - and secondary data, 184, 188, 200, 208, 243
    - as second-order change, 146, 151
    - and subsistence strategies, 264, 265
    - and zooarchaeological research, 22, 250, 343, 346
  - sampling protocol
    - protocol, 113, 347
    - as second-order change, 146, 150–151, 316, 346
    - skimming, 150–151, 156
      - see also* excavation procedures; first-order changes; modifications; second-order changes; site-formation processes
  - sanitation, 259, 345
  - Sargasso Sea, 90–91
  - Saudi Arabia, 270
  - Scandinavia, 296
  - scan site, 232
  - schedules
    - and environmental reconstruction, 320
    - and subsistence strategies, 254–255, 261–263, 265, 271
      - and zooarchaeological research, 24
  - Schiffer, M. B., 123–124
  - schlepp effect, 215
  - Schmid, E., 133
  - scientific
    - literature, 36–38, 87, 182, 266, 326
    - method, 27, 154, 333
  - sclerochronology, 77
  - screen size, *see* excavation procedures
  - seabird, 267
  - seafood, 252
  - sea level, 319, 323–324
  - search time, 24, 254, 257
  - seasonality
    - and animal aggregations, 98
    - and capture strategies, 261, 263
    - of death, 75, 77, 78–79, 196, 263–264, 278
    - and environmental reconstruction, 320
    - and first-order changes, 137
    - indicators, 62–63, 166, 266
    - physiological event, 76–77, 172, 192, 263, 266, 297–298
    - and second-order changes, 147
    - and social markers, 279
    - and subsistence strategies, 259, 260–266
    - and zooarchaeological research, 24, 26, 349
      - see also* growth; increments; periodicity; schedules; subsistence strategies
  - secondary data, 336–341
    - and collection management, 377, 389–390, 393–395
    - construction of age class, 192–199
    - estimate of body dimension, 183–191
    - estimate of dietary contribution, 233–242
    - modifications, 242–244
    - niche breadth, 245–246
    - pathologies, 243–244
    - and primary data, 153–154, 157, 168, 181, 249, 251
    - relative frequency of taxa, 202–213
    - sex, 199–202
    - skeletal frequency, 213–233
      - and subsistence strategies, 251, 252
      - and zooarchaeological research, 335, 341–342
    - secondary refuse, 124
  - second-order changes, 146–151
    - and collection management, 377, 384–386
    - and environmental reconstruction, 317, 319, 323
    - excavation location, 146–147
    - and food preparation, 274
    - and primary data, 153, 161, 169

- and secondary data, 208
- skimming, 150–151
- and zooarchaeological research, 26, 27, 117, 118, 343, 346, 347, 377
- see also* excavation procedures; first-order changes; modifications; sample size; site-formation processes
- secular, 147, 279
- security, 254
- sedentism, 24, 172, 255, 257–260, *see also* catchment area; seasonality; settlement patterns
- Semliki Valley (Zaire), 3, 347
- serial number, 158
- Sergeantson, D., 267
- settlement patterns, 258, 259
  - environmental impact of, 318
  - and exchange systems, 276–277
  - and isotopes, 83
  - and overexploitation, 326
  - and ritual animal use, 285
  - spatial dimensions of, 257–260
  - and subsistence strategies, 252–255
  - and technology, 267
  - temporal dimensions of, 260–266
  - and zooarchaeological research, 5, 22, 24
  - see also* catchment area; mobility; sedentism
- sex, 199–202
  - and age, 65, 69–71, 172, 178, 194, 202, 263
  - display, 54
  - and domestication, 302, 303–304, 306–310, 312
  - and environmental reconstruction, 322, 323, 324
  - and exchange systems, 278
  - and MNI, 206
  - morphological features of, 54, 62–63, 79–80, 81, 158, 164, 172–179, 199–200
  - and nutrition, 255
  - ratio, 153, 172, 182
  - secondary characteristic, 172, 200
  - and size, 65, 69–70, 79–80, 172, 180, 183, 201, 202, 234, 238
  - and subsistence strategies, 267
  - variation in behavior, 297
  - see also* age; estimate of body dimension
- sexual dimorphism, 35, 63–65, 79–80, 179, 190, 200–201, 303–304, 305
- Seychelles (Indian Ocean), 3, 299
- Shanks, O. C., 275
- Sharpey's fiber, 44
- shellfish, 95, 138, 253, 257
- shelter, 254
- Shipman, P., 128
- Shotwell, J. A., 205, 322
- shoulder height, 65–66, 186
- Silver, I. A., 193
- similarity measure, 114–115, 115, 213
- Sinai Desert, 270
- site-formation processes
  - and diet, 256
  - and genetic studies, 81–82
  - and modifications, 168
  - and screen size, 148
  - and seasonality, 75
  - and secondary data, 184, 193, 195, 203, 206, 240, 242
  - and subsistence strategies, 265
  - and zooarchaeological research, 4, 8, 20, 22, 335, 346
  - see also* butchery; first-order changes; modifications; pathologies; postdepositional changes; second-order changes; soil
- site function, *see* archaeological context
- site visit, 158, 386
- Sitzkrieg, 329
- size
  - and age, 65, 69–74, 172, 183–184, 186, 197, 199–202, 199, 264
  - anatomical variation and, 63–64, 172
  - in animals with indeterminate growth, 197
  - biology of, 64–69
  - and domestication, 184, 199–202, 297, 302–305
  - and environmental reconstruction, 260, 319, 323, 324, 325, 327–328, 331, 345, 350
  - and estimate of body dimension, 183–190
  - and nutrition, 255
  - linear fit, 63–64
  - response to stress, 318
  - and sex, 65, 79–80, 172, 183–184, 199–202
  - and storage potential, 275
  - and taxonomy, 32
  - trends in, 189, 198, 303, 319, 334

- size (*cont.*)
  - see also* age; allometry; growth; sex; variation
- skeletal frequency, 213–232
  - anatomical regions, 216–217, 217–219, 223–224
  - estimates of dietary contribution, 233
  - and modifications, 242–244
  - and NISP, 204
  - ratio, 219–224, 221, 222, 223
  - and skeletal completeness, 138, 214–216
  - summary, 230–232
  - and utility indices, 225–230
  - and zooarchaeological research, 182
- see also* behavioral strategies; modifications; observed to expected ratio; utility index
- slaughter pattern, 103
- Smith, B. D., 29
- social institutions
  - and animals as social markers, 279, 280, 348, 349
  - and desires, 254
  - and domestic animals, 294
  - and environmental reconstruction, 317, 318
  - and exchange systems, 285
  - and identity, 5, 7, 10, 25–26, 29
  - and isotopes, 82–83
  - and MNI, 208
  - and needs, 253
  - and obligations, 348
  - and relative frequency of taxa, 213
  - and subsistence strategies, 252, 258, 261, 276
  - and technology, 169, 267, 276
  - and zooarchaeological research, 5, 28, 252, 347, 348
- see also* ethnicity; ritual; status
- soil
  - chemistry, 137, 262
  - as an environmental parameter, 106
  - and environmental reconstruction, 318, 319
  - and isotopes, 86–87
  - pH, 86, 140–141
  - and recovery methods, 149, 321
  - and site-formation processes, 117, 140–141
  - and trampling, 139
  - and zooarchaeological research, 12, 30, 345, 386
- see also* first-order changes
- Somerset Levels (England), 3, 143
- South Africa, 3, 49
- South America, 3, 38, 158, 291–292, 300–301, 310–311
- South Carolina (USA), 83
- Spanish Florida, 155, 155, 158, 166
- specialized knowledge, 22
- species, 33–36, 35
  - composition, 323, 328
  - definition, 34
  - of domestic animals, 290
  - list, 13, 347
- see also* taxonomy
- specimen, archaeological, 9, 161
- specimen weight, 158, 180, 202, 210–212, 211, 213, 234, 245
  - see also* identification; number of identified specimens; primary data; secondary data
- Spencer, L. M., 227
- standard mean ocean water (SMOW), 78
- Star Carr (England), 394
- status, 28, 126, 213, 215, 242, 245, 254, 267, 276, 277, 279, 280–281, 283, 347, 348
  - see also* social institutions
- Steadman, D. W., 202, 325
- Steenstrup, J., 2
- Steward, J. H., 13, 18
- Stiner, M. C., 228–229
- stomach contents, 136–137, 256, 321, 344
- storage
  - and domestication, 299
  - and exchange systems, 276
  - losses during, 275, 298
  - and MNI, 208
  - and primary data, 172
  - and site-formation processes, 145
  - and subsistence strategies, 261, 265
  - and technology, 266
  - and zooarchaeological research, 9
- see also* food preparation
- stratigraphy, 15, 265, *see also* excavation procedures
- structure used in feeding and locomotion, 46–50, 54–56
- studied assemblage, 152, 319
- subclass, 35
- subfamily, 35
- suborder, 35

- subphylum, 35, 39, 42, 45
- subsistence strategies
  - agriculture, 2, 28, 82, 252, 254, 270, 277, 298, 314, 325, 329–331
  - collector, 22, 252–253
  - cost of, 254, 344
  - definition, 252
  - diffuse, 245
  - and domestic animals, 297
  - environmental impact of, 317, 325–329, 349–350
  - and environmental reconstruction, 320, 323, 326, 332–333
  - and excavation procedures, 146–149
  - farming, 252, 257–258, 298, 330–331, 348
  - fishing, 98, 137, 252, 253, 264
  - focal, 245
  - foraging, 22, 232, 249, 252–253, 257–258, 330
  - generalist, 245
  - herding, 83, 102, 102, 103, 252, 263, 290, 295–296, 303, 312, 314, 330
  - horticulture, 252, 298
  - hunter-gatherer, 252–253, 254
  - hunting, 2, 98, 125–126, 125, 253, 254, 263, 265, 298, 325
  - industrial (urban), 254
  - logistic, 252–253, 257–258
  - and nutrients, 96
  - pastoralist, 102, 102, 103, 252, 254, 257–258, 303
  - selectivity of, 333, 349
  - spatial dimension, 257–260, 267, 298, 320, 323
  - specialist, 245
  - temporal dimension, 260–266, 267, 298, 320, 323
  - trapping, 252, 298
  - and zooarchaeological research, 1, 6, 13, 19, 20, 22, 26, 27–28, 251–252, 344–349
  - see also* animal husbandry; migration; seasonality; settlement patterns; technology; tools
  - subspecies, 36, 37, 165, 289, 291
  - sumptuary law, 278
  - superclass, 35
  - survival potential, 203
  - survivorship curve, 100–101, 101, 103, 113, 195, 196, 309
  - sustainability, 328, 332
  - Swedish lake sediment, 316
  - Swiss lake site (Switzerland), 3, 16, 143
  - symbiotic relationship, 93–94, 103, 137–138, 325
  - symbol, 7, 28, 279–285, 305–306, 344, 347, *see also* ritual
  - Symmons, R., 232
  - synonymy, 35, 37–38, 290
  - Syria, 270
  - Systema Naturae*, 33, 290
  - systematic nomenclature, 32–36, 35, 290, *see also* taxonomy
  - systems
    - model, 109
    - theory, 14
  - tabby, 275
  - taboo, 145, 255, 265, 281, 296, 319, 348
  - tame animals, 73, 299–301
  - Tanaina, 273
  - Tanala, 269, 271, 273
  - taphonomy
    - defined, 117
    - and dietary contribution, 242
    - and element representation, 166, 168–169, 213
    - as a first-order change, 122–123
    - magnitude of disturbance, 134–135, 151–152
    - model, 118–120, 119
    - post-depositional disturbance, 134–143
    - research, 143–145
    - and zooarchaeological research, 8, 18, 22
    - see also* first-order changes; modifications; site-formation processes
  - taxon (taxa), definition, 31
  - taxonomy, 32–38, 35
    - abbreviation, 36
    - and animals as social markers, 281
    - conventions, 34, 36
    - definition, 32
    - of domestic animal, 9–10, 36, 290, 291–292
    - folk taxonomy, 32–33, 38, 281
    - systematics, 33–36, 35
    - of taxa in text, 353–362
    - and zooarchaeological research, 7, 9, 31–32
  - Taylor, W. W., 18, 19, 20
  - technology, 266–276
    - and environmental reconstruction, 318, 319

- and excavation procedures, 147, 148
- as indirect evidence of animal use, 137, 213
- and subsistence strategies, 254, 257, 265, 266, 285
- and zooarchaeological research, 13, 14, 16, 22, 28, 251–253
- see also* animal products; domestic animal; raw materials; tools
- Telarmachay (Peru), 310
- temperature, 77–79, 83, 84, 106, 109, 140, 255, 260, 320, 322, 324
- Teotihuacan (Mexico), 3, 320
- tephra, 120
- ternary (3-pole) graph, 195, 196
- terpen*, 17
- territory, 98–99, 349
- Texas (USA), 3, 259
- textile, 348
- thanatic, 123
- Thomas, D. H., 231
- thymine, 81
- time
  - as a cost, 254, 266, 280, 343–344
  - averaging, 265
- Tlingit, 271
- tools, 169, 266–276, 269, 271, 273
  - arrow, 268
  - awl, 133
  - bait, 92, 272, 344
  - basket, 329
  - bird dart, 269
  - blind, 270
  - blowgun, 268
  - bola, 268
  - boomerang, 268
  - bow, 268
  - canal, 330
  - carrying device, 7, 267, 272, 313, 314
  - clothing, 7, 344
  - complex, 267, 269
  - container, 295, 344
  - cordage, 7, 272, 349
  - corral, 268, 299, 309–310, 312, 313, 330
  - crabbing stick, 268
  - and cultural transformation processes, 124
  - deadfall, 270, 271
  - digging stick, 269
  - dip net, 270, 271
  - disguise, 270
  - and domestic animals, 295
  - drag anchor, 268
  - drive, 270, 325
  - enclosure, 330
  - facility, 268, 270–272, 271
  - fence, 270
  - fire, 268
  - fish scoop, 271
  - gaff, 268
  - game piece, 7, 215
  - gorge, 270, 271, 272
  - gourd, 272
  - grinding implement, 344
  - harpoon, 268
  - harpoon dart, 269
  - herring rake, 268, 269
  - hook, 16, 270, 271, 272, 344
  - instrument, 268, 269
    - and isotopes, 82
  - kite, 270
  - knife, 268
  - lance, 268
  - lasso, 270
  - leister, 269
  - line, 268, 272
  - lure, 270
  - manufacture of, 16, 130, 169, 266–267
  - metal, 130
  - and modifications, 242
  - needle, 133
  - nesting box, 301
  - net, 137, 150, 268, 270, 272, 273, 347
  - net gauge, 267, 272, 344
  - net sinker, 134, 267, 344
  - ownership of, 267
  - pen, 301
  - pit trap, 270
  - poison, 268, 270–272
  - punch, 133
  - and raw materials, 133–134
  - residue on, 82, 274–275, 344
  - restraint, 312, 313
  - road, 313
  - rope, 313, 314
  - roundup, 325–326
  - scoop, 272
  - and secondary data, 185, 200, 204, 215

- seed beater, 269
- seine, 270
- shelter, 7, 330
- simple, 267, 269
- sling, 268, 314
- snare, 271, 273
- and social distinctions, 281
- spear, 268
- spinning, 313, 344
- stick, 268
- stone, 130, 268, 274
- and subsistence strategies, 278
- tended facility, 270–271, 271
- terrace, 313, 330
- throwing board, 269
- throwing stick, 268
- toggle, 268
- torch, 270
- trap, 7, 252, 268, 270–272, 273
- untended facility, 271–272, 273
- utensil, 15, 133–134
- wall, 313
- water, 268
- watercraft, 7
- weapon, 15, 268, 269, 270, 271
- weaving, 295, 313, 344
- weir, 270, 271, 271
- wheeled vehicle, 311
- and zooarchaeological research, 6, 7, 344
- see also* animal husbandry; animal products; modifications; raw materials; technology
- tooth, 48
  - acrodont, 43, 44
  - and anatomy, 40, 43, 44
  - bunodont, 52–53, 93
  - canine, 43, 47, 48, 48, 49, 52, 54, 80, 93–94, 135, 176, 178, 305
  - caniniform, 48
  - carnassial, 53, 135, 305
  - cheek tooth, 48, 49, 52, 52, 176
  - closed root, 48, 73
  - composition of, 39, 47
  - crown, 47, 174
  - crown height, 69, 72–74, 176
  - deciduous, 44, 174, 176, 180
  - diphyodont, 44
  - and domestication, 303, 305
  - fang, 53
  - function, 50–54
  - heterodont, 47
  - hypsdont, 52, 93
  - incisiform, 48, 49, 52
  - incisor, 44, 47, 47, 48, 49, 52, 52, 135, 176
  - and increments, 75–77
  - and isotopes, 84–85, 87
  - lophodont, 52
  - molar, 44, 47, 47, 48, 49, 93, 170, 176
  - molariform, 47, 49, 52
  - monophyodont, 44
  - open root, 48–49
  - and pathologies, 170
  - permanent, 44, 174, 176
  - pleurodont, 40, 44, 44
  - polyphyodont, 44
  - premolar, 44, 47, 48, 93, 176, 305
  - pulp, 47, 174
  - radular, 45
  - as raw material, 133, 268, 276
  - root, 47, 174
  - selenodont, 52
  - as structures used in feeding, 46–50, 47, 49, 52, 53, 61
  - thecodont, 40, 43, 44
  - tusk, 47–48, 64
  - worked, 133, 296
  - and zooarchaeological research, 7
  - see also* element types; feeding behavior
- tooth wear, 41, 49–51, 72–74, 172, 174–176, 193, 196, 309, *see also* age
- tooth wear stages (TWS)
  - Grant method, 174, 175, 196
  - Payne method, 174, 176, 177, 196
- topography, 106, 318
- total number of fragments (TNF), 167
- totem, 282, *see also* ritual
- toy, 133, 275–276
- trait list, 13, 17–18
- transportation, 22, 126, 200, 203, 208, 214, 225, 257, 265
- trinomial, 36
- trivial name, 34–35, *see also* species; taxonomy
- Troldebjerg (Denmark), 3, 201
- trophic level, 92–94
  - consumer, 92, 107, 109
  - decomposer, 109

- trophic level (*cont.*)
  - and domestication, 301–302
  - mean trophic level, 328
  - and overexploitation, 326–327, 328
  - and populations, 99
  - predator, 99, 107, 260, 318, 325, 326–327
  - prey, 325, 326–327
  - primary consumer, 92, 93
  - primary producer, 92, 106, 107, 109
  - producer, 92, 93, 107–108, 109
  - and productivity, 109
  - pyramid, 107
  - secondary consumer, 92, 93
  - and stable isotopes, 83–87, 85
  - tertiary consumer, 92, 93–94
  - see also* community ecology; ecosystem; feeding behavior; productivity
- trophy, 242, 344
- turbidity, 322
- Turkey, 293
- turtle shell, *see* element type
- Twana, 267, 269, 271
- twitching, 29
- type locality, 35, 37
- type specimen, 35
- Uaxactun (Guatemala), 3, 17
- Uerpmann, H.-P., 4, 212
- Uerpmann, M., 213
- uniformitarianism, 143
- United States, 37, 259, 390
  - southeastern, 3, 33, 78, 133, 148, 149, 154, 329, 331
  - southwestern, 3, 134, 138, 258, 267, 269, 301, 321
  - western, 166, 311
- urbanization, 5, 25, 28, 277, 321–322
- usable meat, 233–234
- utility index, 225–230, 232, 274
  - food utility index (FUI), 228, 230, 230, 231
  - general utility index (GUI), 226
  - meat utility index (MUI), 230
  - modified general utility index (MGUI), 23, 226–227, 230
  - see also* behavioral strategies
- utility (value), of meat, 215, 219, 226
- van Giffen, A. E., 17
- variation
  - environmental, 63–64
  - genetic, 63–64, 255, 297, 302
  - geographical, 36, 164, 172, 183, 201–202, 238, 318
  - individual, 35, 63–64, 164, 172, 183, 196, 201–202, 237, 238, 255, 318
  - in life cycles, 100
  - population, 26, 63–64, 99–100, 318
  - and reference collection, 378
  - seasonal, 237, 238, 318
  - in size and age, 69–70, 72, 183
  - see also* age; anatomy; estimate of body dimension; sex; size
- variety, 33, 36, 254, 280–281, *see also* taxonomy
- vaterite, 61
- Venezuela, 3, 300, 329
- vernacular name, –10 9
- vertebra, 56–57, 60
  - amphicoelous, 40, 42, 42
  - amphiplatyan, 40, 42, 42
  - and anatomy, 40, 42–44, 42, 43
  - centrum, 40, 42–43, 55, 77, 186
  - cervical, 57, 365
  - haemal arch, 43
  - heterocoelous, 40, 42
  - and hyperostoses, 74
  - and increments, 75
  - lateral spine, 43, 56
  - and locomotion, 56–57, 60
  - and MNI, 207, 209
  - neural arch, 43
  - and NISP, 204, 205
  - opisthocoelous, 40, 42, 42–43
  - procoelous, 40, 42, 42
  - and screen size, 148, 149
  - urostyle, 40
  - see also* element types
- Virgin Islands (West Indies), 3, 300, 328
- volume density (VD), 41, 228, 231–232, 233
- von Bertalanffy growth curve, 327
- Walters, I., 134–135
- warfare, 9, 255
- Warrau, 329
- waterfowl, 90
- Watson, J. P. N., 166
- wealth, 9, 348

Cambridge University Press

978-0-521-85726-0 - Zooarchaeology, Second Edition

Elizabeth J. Reitz and Elizabeth S. Wing

Index

[More information](#)

- Weigelt, J., 18  
 Western Hemisphere, 294, 330  
 West Indies, 114, 300, 312  
 West Stow (England), 242  
 Wheeler, A., 136  
 White, T. E., 20, 21, 206, 207, 224, 227,  
     235–238, 235  
 WIF, 211  
 Wing, E. S., 328  
 Wing, S. R., 328  
 Winn, H. E., 35  
 withers height, *see also* shoulder height  
 Wrangel Island (Russia), 3, 325  
 written record, 9, 145, 252, 279, 343  
 Wyman, J., 2, 17  
 yield, 255, 266  
 York (England), 3, 321–322  
 Young, D. B., 16
- Zagros Mountains, 293  
 Zeder, M. A., 176  
 Ziegler, A. C., 236, 237–238  
 zooarchaeología, 3  
 zooarchaeological collection, 153, 160, 377  
     collection-management policies, 393–394  
     conservation of, 388–389  
     defined, 9  
     in the field and archaeological laboratory,  
         384–386  
     long-term curation, 393–395  
     as voucher, 393–394  
 zooarchaeology, 3–5  
     in the zooarchaeology laboratory, 377,  
         386–390  
     advances, 335, 346–350  
     analysis, 8–9, 146, 153, 157, 251, 332, 333,  
         343–345  
     and anthropology, 2, 12–14, 27–28, 341  
     anthropological research, 27–28, 332  
     applied zooarchaeology, 26, 331–334,  
         393  
     and archaeology, 2, 5, 14–20, 29–30  
     and biology, 1, 5, 28–29, 31, 38, 54, 74–79,  
         87, 115–116, 266, 341  
     biological research, 28–29, 332  
     challenges, 341–342  
     and classics, 2  
     concepts, 336–341  
     definition, 1  
     disseminating results, 146, 209, 377, 378,  
         390–394, 391, 395  
     and ecology, 2, 20–21, 29, 332  
     future directions, 349, 350–351  
     goals, 1, 6, 11, 182, 341–342, 346  
     and history, 2, 14–20  
     interdisciplinary, 1, 20, 252, 341, 345–346,  
         350  
     methodological research, 18, 22, 26, 27,  
         346–347  
     organizations, 4  
     parts of a study, 153, 387, 389  
     practitioners, 2  
     procedures, 342–346  
     protocol, 168, 389  
     and the public, 392, 393  
     research objective, 11, 30, 147, 154, 157, 166,  
         182, 212, 220, 232, 249, 335, 336, 342–343,  
         386, 391  
     research themes, 2, 20–26, 332, 393  
     sources of theories and methods,  
         11, 87  
         verification, 244  
 zooarchéologie, 3  
 zoogeography, *see* biogeography  
 zoologico-archaeologist, 2