

Index

- A.L. 288–1 “Lucy”, 214, 229
 A.L. 333 “First Family”, 214
 Aalat Formation, 187
 vertebrates, non-mammalian, 187
 Abundu Formation, 361, 365
 vertebrates, mammalian, 365
 Acheulean industry, 33, 53, 55,
 58, 60, 62, 82, 92, 94, 95, 96,
 100, 101, 120, 122, 127, 128,
 130, 145, 148, 162, 167, 168,
 169, 171, 177, 178, 179, 187,
 191, 197, 207, 257, 259, 266,
 277, 298, 326, 331, 367, 374,
 377, 378, 382, 383, 384, 387,
 395, 461, 466, 476, 481, 483,
 484, 537, 549, 555
 transition to Middle Stone
 Age, 176
 Addai Formation, 187
 Adu-Asa Formation, 31, 200, 246
 vertebrates, mammalian, 201
 vertebrates, non-mammalian, 201
 Afar Rift, 161, 214, 245, 248, 376
 African Humid Period, 36, 43, 45
 African monsoon, 218, 277
 African–Iberian mammal
 exchange, 31
 Aguirre, Emiliano, 173
 Ahl al Oughlam, 461, 465, 468,
 480, 491
 micromammals, 471
 paleoenvironmental
 reconstruction, 473
 vertebrates, mammalian, 469
 vertebrates, non-mammalian, 471
 Aïn Boucherit, 461, 465
 Aïn Brimba, 461, 465
 Aïn Hanech, 461, 465, 491
 Aïn Maarouf, 466
 Aka Aiteputh Formation, 173
 Albertine Rift Valley, 180
 Alcelaphini and Antilopini
 Criterion, 55
 Allia Bay, 278
 alpha (α)-diversity, 13
 Amboseli, 339
 Amplifier Lakes Hypothesis, 161
 Andalee Ridge, 232
 Anfa Formation, 481
 anthropogenic biases
 in fossil prospection, 18
 Apoko Formation, 361, 367
 Arambourg, Camille, 278, 289,
 311, 461, 463, 465, 466, 475
 Aramis, 278, 454
 paleoenvironments, 167, 204
 vertebrates, mammalian, 204
Ardipithecus kadabba, 1, 30, 166,
 167, 185, 197, 201, 202, 560
Ardipithecus ramidus, 21, 31, 32,
 166, 167, 168, 175, 176, 197,
 203, 206, 212, 213, 255, 332
 habitats, 203
 paleoenvironments, 32
Ardipithecus sp, 248
 Aro Formation, 187
 Asa Issie, 278
 Asbole, 166
Atlanthropus mauritanicus, 466,
 475, 481
 See *Homo heidelbergensis*
 Atlantic meridional overturning
 circulation, 33
 Atlas Range, 472
Australopithecus, 235, 278
 cf. *afarensis*, 242
 genus, origins of, 241, 278
 geographic range, 1
 paleoenvironments, 51
Australopithecus afarensis, 165,
 167, 170, 171, 176, 179, 214,
 222, 255, 311, 324, 330, 343,
 435, 436
 dietary shifts, 241
 habitat preferences, 241
 isotopic dietary data, 19
 juvenile skeleton at Dikika,
 229
Australopithecus africanus, 53,
 135, 137
Australopithecus anamensis, 167,
 171, 173, 255, 278, 311, 323,
 330
 dietary shifts, 241
Australopithecus bahrelghazali,
 184, 241
Australopithecus deyiremeda,
 165, 237, 249
Australopithecus garhi, 167
Australopithecus prometheus, 67
Australopithecus sediba, 52
 Awash River, 212, 214, 216, 229
 Awash Valley, 231
 Bahariya-Farafra, 464
 Balchit, 257
 Baringo Basin, 343
 basal hominin, 29
 Baynunah, 29
 Beglia Formation, 26, 464
 Behrensmeyer, Anna K., 1, 312
 Benguela upwelling, 51
 Beni Mellal, 463
 Berg Aukas, 26, 51
 paleoenvironmental
 reconstruction, 51
 Bestwood 1, 148
 beta (β) diversity, 13
 Biberson, P., 481
 Biome, definition of, 7
 Bishop, W.W. “Bill”, 1, 334, 341,
 342, 343, 531
 Bled Douarah, 26
 Blombos Cave, 62
 vertebrates, mammalian, 63
 Bloubank stream, 82
 Blumenschine, Robert, 394
 Bodele Dora, 201
 Bolt’s Farm, 56
 paleoenvironmental
 reconstruction, 57
 vertebrates, mammalian, 56
 vertebrates, non-mammalian, 57
 bonanza effect
 definition of, 17
 Boomplaas Cave, 63
 micromammals, 63
 vertebrates, mammalian, 63
 Border Cave, 58
 micromammals, 58
 vertebrates, mammalian, 58
 Bou Hanifia, 26, 461, 464
 Bourlière, François, 1
 Brain, Charles “Bob”, 56, 82, 86,
 102, 105, 137
 Broom, Robert, 51, 52, 54, 55,
 56, 82, 86, 92, 96, 102, 107,
 115, 135, 137, 138
 Brown, Frank, 1, 278, 279, 312,
 314, 320, 330
 Bruhnes Chron,
 Bruhnes/Matuyama reversal,
 262
 Buffalo Cave, 51
 Buia-Dandiero Basin, 187
 aquatic taxa, 192
 micromammals, 189
 paleoenvironmental
 reconstructions, 194
 vertebrates, mammalian, 189,
 192
 vertebrates, non-mammalian,
 189, 192
 Bukra Formation, 187
 Bushland, definition of, 3
 Bushman Rock Shelter, 58
 invertebrates, 58
 vertebrates, non-mammalian, 58
 vertebrates, mammalian, 58
 Busidima Formation, 231
 at Gona, 207
 paleosols, 199
 pollen, 208
 Busidima River, 200
 Butzer, Karl, 104, 120, 135, 140,
 145, 278, 279
 Buxton-Norlim Limeworks, 135,
 See Taung
 C₃ plants, definition of, 10
 C₄ plants, definition of, 10
 Cameroon, 30
 Cangalongue, 50
 Canteen Kopje, 148
 carrières Thomas. See Thomas
 Quarries
 catena, definition of, 7
 Cave of Hearths, 51, 66, See
 Makapansgat
 Chado-Libyan biogeographical
 province, 29
 Chavaillon, Jean, 257, 263
 Chemeron Formation, 175
 paleoenvironmental
 reconstruction, 347, 353
 diatomites, 344
 vertebrates, mammalian, 347
 Chemoigut Formation, 176
 vertebrates, mammalian, 176
 vertebrates, non-mammalian, 176
 Chesowanja
 evidence for controlled use of
 fire, 176
 Chew Bahir rift, 269
 chimpanzee
 meat-eating, 10
 Chitimwe Beds, 453
 Chiwondo Beds, 140, 182, 453
 paleosols, 182
 vertebrates, mammalian, 182,
 456
 paleoenvironmental
 reconstruction, 459
 vertebrates, mammalian, 182,
 456
 vertebrates, non-mammalian,
 182
 Chorora Formation, 29, 168
 vertebrates, mammalian, 169
Chororapithecus, 25, 29

- Chororapithecus abyssinicus*, 168
 Chyulu Hills, 263
 Clark, J. Desmond, 169
 Clarke, Ronald, 114
 climate archives
 continental drilling, 16
 climate-averaging, 19
 closed canopy effect, 79
 Cold Air Cave, 51
 Collapsed Cone, 80
 common-cause effects, 16
 community
 definition of, 6
 paleoecology, definition of, 13
 Congo Basin, 184
 Congo River, 184
 convergent evolution
 definition of, 14
 Cooke, H. B. S. (Basil), 120, 148
 Cooper's Cave, 55, 86, 91, 92
 invertebrate traces, 55
 paleoenvironments, 55
 vertebrates, mammalian, 55,
 89
 vertebrates, non-mammalian,
 55
 Cooper's B, 86
 Cooper's D, 86
 paleoenvironmental
 reconstruction,
 Coppens, Yves, 214, 278, 289
 Cornelian Land Mammal Age,
 120
 Cornelia-Uitzoek, 58, 120, 133,
 148, 503
 phytoliths, 124, 126, 131
 vertebrates, mammalian, 123
 Cradle of Humankind World
 Heritage Site, 92
 Danakil Depression, 187
 Dandiero
 gastropods, 189
 Dar Bou Azza Formation, 481
 Dart, Raymond, 51, 58, 66, 135
 Savannah Hypothesis,
 Darwin, Charles, 14
 de Bozas, Bourg, 278, 289, 311
 de Heinzelin, Jean, 1, 279
 Deacon, Hilary, 63, 64
 depositional environments
 eastern Africa, 16
 northern Africa, 18
 southern Africa, 17
 Die Kelders, 62
 vertebrates, mammalian, 62
 vertebrates, non-mammalian,
 62
 Diepkloof rock shelter, 60
 micromammals, 60
 vertebrates, mammalian, 60
 vertebrates, non-mammalian,
 60
 Dikika, 166, 229, 231
 Australopithecus afarensis, 236
 Dikika juvenile, DIK-1-1
 ("Selam"), 236
 micromammals, 237
 vertebrates, mammalian, 232,
 236
 vertebrates, non-mammalian,
 239
 Ditsong National Museum of
 Natural History, 138
 diversity gradients, 14
 Djurab Desert, 29
 Drimolen
 bone tools, 54
 Main Quarry, 54
 Makondo site, 54
 micromammals, 54
 paleoenvironments, 54
 vertebrates, mammalian, 54
 vertebrates, non-mammalian,
 54
 Duinefontein 2, 62
 coprolites, 62
 micromammals, 62
 vertebrates, mammalian, 62
 early *Homo*, 55, 114
 role of aridity in emergence
 of, 15
 East African Rift System
 origins of, 161
 East Rudolf. See East Turkana
 ecomorphology
 definition of, 12
 ecosystem, definition of, 6
 Ekora, 172
 vertebrates, mammalian, 172
 El Niño Southern Oscillation,
 136
 Elands Bay Cave, 59
 micromammals, 60
 vertebrates, mammalian, 59
 vertebrates, non-mammalian,
 60
 Elandsfontein, 9, 60, 193, 486,
 503, 537
 pollen, 60
 vertebrates, mammalian, 60
 endurance running, 119
 Engare Nyiro river, 385
 Engare Sero river, 385
 environment, definition of, 6
 Eonile, 462, 465
 Eosahabi rivers, 31
 Epipaleolithic, 257
 Equid Tooth Site, 362
 equitability, 13
 eurytopy, 32
 Fanta Stream, 169
 faunal turnover, 36, 43
 definition of, 36
 pulses, 15
 Fauresmith industry, 145, 148
 Fayum, 472
 Fejej, 171, 278
 vertebrates, mammalian, 171
 vertebrates, non-mammalian,
 171
 Felid Hill, 362, 367
 vertebrates, mammalian,
 367
 First Appearance Datum (FAD)
 definition, 19
 Fish Cliffs, 365
 Florisbad, 59, 121
 fossil wood, 59
 invertebrates, 59
 vertebrates, mammalian, 59
 Forests
 afromontane, 3
 definition of, 3
 dry, 3
 gallery, 3
 rain, 3
 fossil burrows, definition of, 10,
 141, 377
 Fossil Recovery Potential, 17,
 22
 fossil tooth morphology
 use in community
 reconstruction, 14
 Fuchs, Vivian E., 343
 Fynbos biome, 159
 Gadeb, 169
 Galana Boi Formation, 312
 Galili, 242
 Galili Formation, 168, 242
 Caashacado Member, 247
 Dhagax Member, 242, 247
 Dhidinley Member, 242, 246
 Godiray Member, 242, 246
 Lasdanan Member,
 micromammals, 249
 paleoenvironmental
 reconstruction, 249
 Shabeley Laag Member, 242,
 247
 vertebrates, mammalian, 249
 vertebrates, non-mammalian,
 249
 Lasdanan Member, 242, 245
 gamma (γ -) diversity, 13
 Gauss–Matuyama magnetic
 reversal, 69
 Gentry, Alan, 286, 351
 geomorphology
 Laetoli region, 9
 Gerbil Event, 31
 Getharkulle, 246
 Ghaap Group dolomites, 145
 Ghaap Plateau, 135
 Gibraltar straits, 467
 Gladysvale, 53
 coprolite, 53
 micromammals, 53
 paleobotanical remains, 53
 vertebrates, mammalian, 53
 Goldsmith's Farm, 57
 paleoenvironmental
 reconstruction, 57
 vertebrates, mammalian, 57
 Gombore, 266
 Gona, 166, 197
 micromammals, 208, 212
 paleoenvironmental
 reconstruction, 202, 206,
 209, 212
 paleoenvironments, 202, 206
 vertebrates, mammalian, 201,
 212
 vertebrates, non-mammalian,
 202, 205, 206, 208
 Gondolin, 52
 micromammals, 52
 paleoenvironmental
 reconstruction, 52
 vertebrates, non-mammalian,
 52
 Goreya Formation, 187
 Gorongosa National Park, 182
 Grasslands
 definition of, 6
 edaphic, 56, 117
 Green Sahara Periods
 definition of, 462
 Green Sahara phases, 36
 Gregory Rift, 360, 385
 Gregory, John Walter, 332
 Grotte des Rhinocéros, 481
 Grumeti River, 410, 411
 Gulf of Aden, 27, 28, 29, 30, 214,
 229, 324, 325, 328
 Gulf of Aden Rift, 231
 Haasgat, 53, 79
 micromammals, 53
 vertebrates, mammalian, 53
 vertebrates, non-mammalian,
 53
 habitat, definition of, 6
 habitat heterogeneity, 7
 habitat spectra
 use in paleoenvironmental
 reconstructions, 12
 Hadar Formation, 166, 214, 216,
 231
 Basal Member, 216, 225, 231
 Denen Dora Member, 216, 231
 invertebrates, 218
 Kada Hadar Member, 216, 231
 micromammal, 220, 222
 mollusks, 218
 ostracods, 218
 paleosols, 216, 217
 pedogenic carbonates, 232
 pollen record, 218
 Sidi Hakoma Member, 216,
 231, 232
 vertebrates, mammalian, 218,
 222
 vertebrates, non-mammalian,
 220, 222
 Hadza, 373
 Hamadi Das, 201
 Harasib, 26
 Harasib 3
 paleoenvironmental
 reconstruction, 51
 Hay, Richard, 1, 395
 Heinrich Events, 33
 herbivores
 abrasive diets, 13
 browsing, use in paleohabitats,
 13
 grazing, use in paleohabitats,
 13

Index

- Hill, Andrew, 343, 345, 351
 Hoedjiespunt, 61
 micromammals, 61
 vertebrates, mammalian, 61
 vertebrates, non-mammalian, 61
 Hoffman, A.C., 120
 Hoffstetter, Robert, 475
 Homa Formation, 177, 361
 vertebrates, mammalian, 362
 Homa Peninsula, 177, 360
 hominin foraging
 landscape models, 428
 marginal scavenging, 429
 passive scavenging, 429
 power scavenging, 429
 hominin habitat types
 affected by rifting, 213
 mosaic environments, 19
 hominin land use
 Olduvai Gorge, 9
 hominin taxic diversity, 17, 21
 hominin-climate interactions
 critique, 15
 Hominini, 21, 24, 25, 161, 170, 324
Homo, 164, 176
 genus, 324
 genus origins of, 278
 geographic range, 1
 oldest specimen, 165
Homo erectus, 54, 114, 167, 169, 171, 179, 197, 208, 259, 277, 311, 326, 395, 412
 appearance of, 298, 310
 trackways, 327
Homo habilis, 10, 114, 171, 178, 311, 325, 394, 395, 409, 411, 430
Homo heidelbergensis, 167, 259, 484
Homo naledi, 56
Homo rhodesiensis, 475
Homo rudolfensis, 171, 182, 311, 325, 453
Homo sapiens, 33, 259, 278, 412, 435
 emergence of, 47
Homo sapiens idaltu, 167, 168
Homo sp, 127
 Hoogland, 52
 paleoenvironmental reconstruction, 52
 Horse Mandible Cave, 69, 80
 Howell, F. Clark, 1, 213, 278, 289, 546
 Howieson's Poort tool industry, 64
 Hrdlička, Ales, 135
 Humbu Formation, 178
 Humpata Plateau, 50, 138
 Iberian Peninsula, 31
 Incisor morphology
 use in dietary reconstruction, 13
 Indian Ocean Dipole, 136
 indicator species
 use in paleoenvironmental reconstructions, 11
 Intertropical Convergence Zone, 2, 28, 33, 136, 344
 invertebrates
 use in paleoenvironmental reconstruction, 11
 Isaac, Glynn, 312, 378, 384
 Jebel Irhoud, 466
 Jebel Zelten, 461, 463
 Johanson, Donald, 214, 394
 Kaiso Village Formation, 180
 vertebrates, mammalian, 180
 Kalahari desert, 135, 147
 Kalb, Jon, 214
 Kamasia Range. See Tugen Hills
 Kanam Formation, 361
 vertebrates, mammalian, 362
 Kanapoi, 172, 241, 278, 312
 micromammals, 173
 vertebrates, mammalian, 173
 vertebrates, non-mammalian, 173
 Kanjera, 361
 hominin foraging strategies, 370
 hominin habitats, 370
 vertebrates, mammalian, 178
 Kanjera North Member, 367
 gastropods, 369
 vertebrates, mammalian, 368
 Kanjera South Member, 79, 367
 hominin activities, 375
 gastropods, 369
 tool use, 373
 vertebrates, mammalian, 367
 vertebrates, non-mammalian, 369
 Kantis, 176, 241
 vertebrates, mammalian, 176
 Kapthurin, 486
 Kapthurin Formation, 176
 gastropods, 176
 vertebrates, mammalian, 176
 vertebrates, non-mammalian, 176
 Kapthurin River, 348
 Karonga Basin, 453
 Karre, 266
 Kasibos Formation, 361, 365
 vertebrates, mammalian, 365
 Kathu Pan 1, 148
 Kef Haroun Formation, 481
Kenyanthropus platyops, 236, 324, 330
 Kerio River, 311
 Kesem-Kebena, 168
 vertebrates, mammalian, 168
 vertebrates, non-mammalian, 168
 Kibish Formation, 278, 280
 Kisegi-Nyabusosi, 180
 Klasies River Cave, 64
 charcoal remains, 64
 vertebrates, mammalian, 64
 vertebrates, non-mammalian, 64
 Klein, Richard, 62, 63
 Kohl-Larsen, Ludwig, 436
 Kollé, 183
 vertebrates, mammalian, 184
 Konso
 micromammals, 273
 paleoenvironments, 273
 vertebrates, mammalian, 169, 271
 vertebrate, non-mammalian, 169, 271
 Konso Formation, 169, 269
 Konso-Gardula, 169
 Koobi Fora Formation, 171, 300, 311
 Burgi Member, 325
 Chari Member, 327
 invertebrates, 328
 KBS Member, 325
 Lokochot Member, 324
 Lonyumun Member, 321
 micromammals, 316
 Moiti Member, 324
 Okote Member, 326
 Tulu Bor Member, 324
 vertebrates, mammalian, 315
 vertebrates, non-mammalian, 323, 328
 fossil wood, 327
 paleosols, 321
 Koro Toro, 182, 183, 184, 222, 240, 241
 phytoliths, 184
 vertebrates, mammalian, 184
 Kossom Bougoudi, 183
 vertebrates, mammalian, 183
 vertebrates, non-mammalian, 183
 Kromdraai, 55, 82, 83, 84, 85, 86, 92, 502, 520, 571
 Member 3, 83
 paleoenvironments, 55
 paleohabitat reconstruction, 85
 vertebrates, mammalian, 55
 vertebrates, non-mammalian, 55
 Kromdraai B, 55, 83, 84
 Kyeoro Formation, 180
 Laetoli, 140, 179, 435
 catenas, 7
 coprolites, 10
 footprints, 10
 fossil wood, 448
 gastropods, 442, 443
 hominin trackway, 435
 invertebrates, 448
 macrobotanical remains, 442, 443
 micromammals, 443, 450
 Naibadad Beds, 439
 Ngaloba Beds, 439
 Olpiro Beds, 439
 paleoenvironmental reconstruction, 448
 pollen, 449
 termite nests, 9
 Upper Laetolil Beds, 435
 Upper Ndolanya Beds, 435
 Upper Ngaloba Beds, 435
 vertebrates, mammalian, 443, 448
 vertebrates, non-mammalian, 442, 443
 Lainyamok, 376
 vertebrates, mammalian, 381
 Lake Abhe, 229
 Lake Albert, 30, 161, 180
 Lake Baringo, 332, 343
 Lake Chad, 30, 182
 Lake Chamo, 269
 Lake Edward, 180, 181
 Lake Eyasi, 436
 Lake Gadeb
 pollen records, 169
 Lake Hadar, 218
 Lake Ichkeul, 461, 465
 Lake Magadi, 376, 382, 384, 410
 Lake Masek, 395
 Lake Natron, 384, 385
 Lake Ndutu, 395
 Lake Rudolf. See Lake Turkana
 Lake Tana, 161
 Lake Turkana, 298, 311
 Lake Victoria, 161, 360
 Langebaanweg, 9, 61, 177, 349, 454, 514, 569
 vertebrates, mammalian, 61
 vertebrates, non-mammalian, 61
 large cutting tool, 259
 Lasdanan Member, 245
 Last Appearance Datum (LAD)
 definition, 19, 46
 Last Glacial Maximum, 33, 45
 Later Stone Age, 33, 57, 145, 148, 169, 257
 leaf morphology
 use in paleoenvironmental reconstruction, 11
 leaf physiognomy, 28, 174, 534
 Leakey, Louis, 362, 365, 394, 436
 Leakey, Mary, 179, 394, 397, 435, 436
 Leakey, Maeve, 172, 312
 Leakey, Richard, 278, 299, 312, 384
 Ledi-Geraru, 165
 Lemagurut, 436
 Lemudong'o, 176
 vertebrates, mammalian, 177
 vertebrates, non-mammalian, 177
 Lenderut, 376, 382
 Levallois
 cores, 128
 technique, 120, 130
 Lissasfa, 464
 Lokalelei, 372
 Lomekwian industry, 298
 Lonyumun Lake, 173
 Lorenyang Lake, 325
 Lothagam, 29, 30, 31, 100, 140, 172, 177, 312, 573

- vertebrates, mammalian, 172
 vertebrates, non-mammalian, 172
 Lower Laetolil Beds, 241
 lower Omo Valley, 289
 Lukeino Formation, 30, 174
 paleoenvironmental reconstruction, 30
 vertebrates, mammalian, 175
 vertebrates, non-mammalian, 175
 Luleche, 53
 Lusso Beds, 181
 vertebrates, mammalian, 181
 vertebrates, non-mammalian, 181
 invertebrates, 181
 Main Ethiopian Rift, 231, 257, 289
 Maka, 241
 Makapansgat, 51, 57, 66, 67, 74, 78, 79, 95, 506, 530
 Buffalo Cave
 paleoenvironments, 51
 coprolites, 77
 Exit Quarry, 51, 81
 Member 3, 51, 69, 77
 Member 4, 80
 Member 5, 80
 micromammals, 51, 76, 81
 paleoenvironmental reconstructions, 78, 80
 pebble, 51
 pollen, 51
 Rodent Corner, 51, 81
 taphonomic agents, 79
 vertebrates, mammalian, 71
 Malan, B. D., 59, 145
 Malapa, 52
 coprolite, 52
 micromammals, 52
 paleoenvironmental reconstructions, 52
 phytoliths, 52
 Mamatwan Mine, 158
 mammal species
 arboreal, as vegetation indicators, 340
 Manonga Valley, 179, 437
 Mansoura, 466
 Maragheh, 28
 Masai Mara, 429
 Mason, Revil, 51, 66, 120
 Matjhabeng, 58
 vertebrates, mammalian, 58
 vertebrates, non-mammalian, 58
 Mazamba Formation, 182
 megaherbivore
 definition of, 321
 Melka Kunture Formation, 169, 257
 Melka Kunture, 169
 Garba I, 262
 Gombore, 257
 paleoenvironmental reconstruction, 268
 Garba, 257
 Garba IV, 262
 Karre I, 257
 Kella, 262
 micromammals, 267
 pollen assemblages, 259
 Simbiro, 257
 vertebrates, mammalian, 265
 vertebrates, non-mammalian, 265
 Wofi, 257
 Menacer, 464
 Mesgid Dora, 240
 mesowear
 definition of, 13
 Messinian salinity crisis, 1, 31, 467, 521, 532
 microwear, dental
 definition of, 13
 Middle Awash, 167, 231
 Adu-Asa Formation, 167
 Belohdelie, 167
 Bodo, 167
 Bouri Formation, 168
 Maka, 167
 Sagantole Formation, 167
 Middle Stone Age, 33, 55, 57, 145, 168, 257, 259, 377, 378, 439
 Middleton Shaw, J.C., 55
 Mid-Miocene Climatic Optimum, 1
 Milankovitch cycles, 2, 344, 345
 definition of, 344
 Mille-Logya, 164
 vertebrates, mammalian, 164
 Minaars, 54
 vertebrates, mammalian, 54
 Moghara. See Wadi Moghra
 molar hypsodonty, 13
 Moncucco Torinese, 31
 Moquorbashi, 245
 mosaic vegetation, definition of, 7
 Motsetse, 53
 micromammals, 54
 vertebrates, mammalian, 54
 Mpesida Beds, 30, 174
 vertebrates, mammalian, 174
 vertebrates, non-mammalian, 174
 Mt. Aalat, 187
 Mt. Olmoti, 413, 428
 Mt. Ologesailie, 378
 Mullu basin, 242
 Mursi Formation, 170, 241, 278, 280, 312
 paleoenvironmental reconstruction, 287
 fossil wood, 288
 paleosols, 282
 vertebrates, mammalian, 284
 vertebrates, non-mammalian, 285, 287
 yellow sands, 279, 280
 N 885, 184
 Nachola Formation, 173
 Nachukui Formation, 171, 298
 Kaitio Member, 300
 Kalochoro Member, 300
 Lokalalei Member, 300
 Naiyena Engol, 301
 Nasura 2, 300
 ostrich eggshell, 304
 paleoenvironmental reconstruction, 305, 308
 vertebrates, mammalian, 304
 vertebrates, non-mammalian, 304
 Naiyena Engol river, 300
 Nakali, 28, 173, 185
Nakalipithecus, 25, 173
Nakalipithecus nakayamai, 25, 28, 173
 Nama-Karoo grassland, 159
 Namurungule Formation, 28, 173
 vertebrates, mammalian, 173
 Nawata Formation, 30, 172, 177
 Nelson Bay Cave, 63
 micromammals, 64
 vertebrates, mammalian, 63
 vertebrates, non-mammalian, 64
 Ngorongoro, 401, 436
 Ngorongoro Volcanic Highlands, 395
 Ngorongoro Formation, 174
 pollen, 174
 vertebrates, mammalian, 174
 Niger Delta, 184
 Niger Forest Phase, 29
 Nile River
 drainage, 312
 Nkalabong Formation, 278, 312
 Nkalabong range, 280
 Nkondo Formation, 180
 invertebrates, 180
 vertebrates, mammalian, 180
 vertebrates, non-mammalian, 180
 Nkondo-Kaiso, 180
 Northern Hemisphere
 Glaciation, 344
 Nyaburogo Formation, 180
 Nyabusosi Formation, 180
 Nyakabingo Formation, 180
 Nyokie, 382
 vertebrates, non-mammalian, 382
 obsidian, raw material, 259
 Ocean Drilling Program, 184
 Okavango Delta, 30, 32, 78, 223, 416
 Oldeani, 436
 Oldoinyo Lengai, 385
 Oldonyo Nyokie, 376
 Oldowan industry, 55, 82, 92, 94, 95, 99, 100, 101, 148, 158, 162, 166, 169, 171, 172, 176, 179, 187, 191, 197, 207, 213, 214, 216, 256, 259, 298, 331, 369, 372, 373, 374, 387, 395, 397, 411, 439, 465, 500, 503
 Olduvai event, 269
 Olduvai Gorge, 127, 178, 413
 Bed I, 178, 372
 Bed II, 179, 277
 Bed III, 179
 Bed IV, 179
 home bases, 394
 hominin landuse, 394
 invertebrates, 397
 landscape reconstruction, 9
 Lower Bed II, 413, 428
 micromammals, 10, 401
 paleo-lake, 413
 paleo-wetland, 427
 phytoliths, 409, 414
 plant macrofossils, 397, 413
 pollen, 11
 stone circle, 399, 411
 vertebrates, mammalian, 402, 414
 vertebrates, non-mammalian, 404, 409, 414
 Olduvai Gorge DK
 paleoenvironments, 410
 phytoliths, 410
 vertebrates, mammalian, 404
 vertebrates, non-mammalian, 410
 Olkesititi Member
 vertebrates, mammalian, 382
 Olmoti, 436
 Ologesailie Basin, 376
 Member 1, 377
 Member 10, 378
 Member 11, 378
 Member 7, 377
 Olkesititi Member, 378
 Ologesailie Formation, 177, 377
 Oloronga Beds, 382
 vertebrates, mammalian, 378
 Oltulelei Formation, 377
 Oluka Formation, 180
 Omo River, 279, 280, 289, 311
 Omo Valley, 278
 Omo-Turkana Basin, 272, 275, 283, 298, 307, 309, 312, 330
 refugium, 171
 oncolites, 30
Orrorin, 1, 174, 185
 humerus morphology, 30
Orrorin tugenensis, 1, 30, 175, 185
 Osteodontokeratic Culture
 model, 67
 Otavi Mountains, 25
Otaviipithecus, 26
Otaviipithecus namibiensis, 51
 Oued el Hammam. See Bou Hanifa
 Oued Mya 1, 26
 Oulad Hamida Formation, 481
Ouranopithecus, 28
 paleo-lakes, 9
 Chad, 184
 Hadar, 9

Index

- paleo-lakes (cont.)
 Kaiso, 180
 Konso, 9
 Lokochot, 324
 Lorenyang, 309
 Malawi, 459
 Obweruka, 180
 Olduvai, 9
 Ologesailie, 9
 Turkana, 282
- paleorivers
 Awash, 166, 169, 267
 Kerio, 312
 Lusso, 180
 Omo, 289, 309, 312
 Peninj, 384
 Thabaseek, 141
 Turkwel, 312
- paleosols
 definition of, 8
 Taung, 9
- PaleoTurkana Database, 315
- Pan*, 176
- Pan-Homo*
 divergence, 24
- Paranthropus*, 52
 appearance of, 298
 early, 343
 extinction, 310, 328
 genus, 324
 geographic range, 1
- Paranthropus aethiopicus*, 20,
 290, 435, 436
- Paranthropus boisei*, 20, 169, 171,
 182, 311, 326, 327, 384, 394
- Paranthropus robustus*, 54, 55,
 56, 102, 108, 114
- Partridge, Timothy, 67
- Patterson, Bryan, 172, 311
- Peabody, Frank, 145
- pedogenesis, 245, 246, 377, 378,
 482
- Peninj, 178
 micromammals, 178, 388, 390
 paleoenvironmental
 reconstruction, 391
 pollen, 178
 vertebrates, mammalian, 178,
 387
 vertebrates, non-mammalian,
 388
- phytoliths, 146, 159, 450
- Pikermi, 28
- Pilbeam, David, 362
- Pinnacle Point, 63
 invertebrates, 63
 micromammals, 63
 vertebrates, mammalian, 63
- plant physiognomy, definition
 of, 7
- Plovers Lake, 54
 micromammals, 54
 paleoenvironments, 54
 pollen, use in
 paleoenvironmental
 reconstruction, 11
- vertebrates, mammalian, 54
 vertebrates, non-mammalian,
 54
 African Humid period, 36
- Praeanthropus*, 435, 439
- punctuated equilibrium, 15
- Rawi Formation, 177, 361, 365
 vertebrates, mammalian, 365
- Reck, Hans, 395
- Red Sea Rift, 231
- refugia, 25, 32
- refugium. See refugia
- Rhinos Cave. See Grotte des
 Rhinocéros
- Acheulean industry, 490
 micromammals, 485
 vertebrates, mammalian, 485
 vertebrates, non-mammalian,
 486
- Rising Star Cave, 56
 vertebrates, non-mammalian,
 56
- Robinson, John, 56, 102, 107
- Rose Cottage Cave, 59
 micromammals, 59
 vertebrates, mammalian, 59
 vertebrates, non-mammalian,
 59
- Rusinga Island, 10, 360
- Sagantole Formation, 203, 231
- Sahabi, 461
- Sahara Desert, 29, 36, 185
- Sahelanthropus tchadensis*, 1, 4,
 20, 29, 182, 183
- Salé, 466
- Samburu Hills, 28, 173
- Samburupithecus kiptalami*, 25,
 28, 173
- Samos, 28
- sampling biases, 45
- sand dunes, fossil, 9
- Sangatole Formation
 As Duma member, 203
 Segala Noumou member, 203
- Satiman, 436
- Savanna Biome, 156, 159
 definition of, 6
- Schoonspruit valley, 120
- Schurberg mountains, 52
- Semliki River, 180
- Serengeti, 11, 59, 80, 178, 237,
 370, 373, 395, 411, 413, 428,
 436, 443, 448, 450, 515
- Shabeley Laag Member, 249
- Shackleton, Robert, M., 343
- Shaw, J.C. Middleton, 86
- Shiangoro River, 280
- Shungura Formation, 170, 278,
 289, 300, 312, 456
 Kalam locality, 290
 micromammals, 291
 paleobotanical remains, 291
 paleoenvironmental
 reconstructions, 296
- paleosols, 171, 291
 “Type Locality”, 290
 species richness, 292
- Sibudu Cave, 64
 paleobotanical remains, 64
 paleoenvironments, 64
 vertebrates, mammalian, 64
 vertebrates, non-mammalian,
 64
- Sidi Abdallah, 480
- Sidi Abderrahmane, 466, 481
- Sidi Hakoma Member, 234
 pollen, 218
- Simbiro, 266
- Sinda Beds, 180
 vertebrates, mammalian, 180
 vertebrates, non-mammalian,
 180
- Singer, Ronald, 64
- Siwaliks, 28
- Skoura, 464
- Skurweberg Mountains, 53
- southern Kenya rift, 378
- species abundances
 use in paleoenvironmental
 reconstruction, 11
- species richness
 estimates of, 14
- speleothems
 use in dating studies, 18
- Sterkfontein, 55, 56, 67, 86, 92,
 93, 94, 95, 96, 97, 98, 99,
 100, 101, 137, 498, 506, 530,
 535, 547, 570, 571, 574
 formation, 93
 fossil wood, 98, 99
 invertebrate traces, 55
 Jacovec Cavern, 98
 Lincoln Cave, 100
 Member 2, 98
 Member 4, 98
 Member 5Stw53, 100East
 (Oldowan), 100West
 (Acheulean), 100
 micromammals, 99
 Name Chamber, 55
 paleoenvironmental
 reconstruction, 55
 Silberberg Grotto, 55
 vertebrates, mammalian, 100
 vertebrates, non-mammalian,
 55
- Still Bay tool industry, 9, 63, 64
- Swartkrans, 56, 91, 92, 96, 98, 99,
 102, 114, 115, 502, 571
 accumulating agents, 109
 bone tools, 106
 burnt bones, 56
 coprolites, 109
 ecologically sensitive taxa,
 108
 gastropods, 116
 Hanging Remnant, 109
 Lower Bank Member 1, 109
 micromammals, 56, 116
 paleoenvironments, 105, 117
- vertebrates, mammalian, 56,
 105, 109
 vertebrates, non-mammalian,
 116
- Tai Forest, 10
- Taieb, Maurice, 1, 162, 166, 167,
 214, 228, 229, 384
- taphonomic bias
 definition of, 18
- Taung, 57, 135, 136, 139, 141,
 498
 aquatic fauna, 140
 child, *Australopithecus*
africanus, 57
 Crustacea, 141
 invertebrates, 57
 micromammals, 138
 paleoenvironments, 140
 pollen records, 137
 taphonomic agents, 137
 vertebrates, mammalian, 57,
 138
 vertebrates, non-mammalian,
 57, 140
- taxonomic composition
 use in paleoenvironmental
 reconstruction, 11
- taxonomic habitat index
 use in paleoenvironmental
 reconstruction, 12
- Tchiua, 50
- Ternifine. See Tighennif
- Th-OH quarries
 paleoenvironments, 491
- Thabaseek Tufa, 137, 138
- Thabasikwa River, 136
- Thackeray, J. Francis, 145
- Thomas Quarries, 466
- Thomas Quarry I
 Grotte à Hominidés, 481, 482
- Tibesti mountains, 262
- Tighennif, 466, 475
 micromammals, 478, 479
 paleoenvironments, 480
 paleo-lake, 479
 vertebrates, mammalian, 477
 vertebrates, non-mammalian,
 478
- Tobène, 185
- Tobias, Phillip, 67, 135, 138, 344
- topographic heterogeneity, 30
- Toros-Menalla, 20, 29, 30, 177,
 182, 183, 501, 523
 insect traces, 183
 phytoliths, 183
 vertebrates, mammalian, 183
 vertebrates, non-mammalian,
 183
- Total-Evidence Dating
 definition of, 20
- trace fossils, definition of, 10
- Tugen Hills, 28, 174, 332
 body size effects, 340
- Chemeron Formation, 332
- Kapthurin Formation, 332

Lukeino Formation, 332	van Riet Lowe, Clarence, 51, 66	West African	Wonranso-Mille
Mpesida beds, 31, 332	Variability Selection Hypothesis, 15	pollen records, 184	vertebrates, mammalian, 165
Muruyur Formation, 332	vegetation	White, Frank, 3	Wooded grasslands, definition of, 6
Ngorora Formation, 332	associations, definition of, 7	White, Tim, 394	Woodlands, definition of, 3
Sagatia, 333	formation, definition of, 7	Winam Gulf, 360	Woranso-Mille, 165, 240, 278
vertebrates, mammalian, 337	Vrba, Elisabeth, 15, 52, 55, 97, 105, 291	Wochacha volcano, 262	Wymer, John, 64
Turnover Pulse Hypothesis, 36, 344		Wonderwerk Cave, 58, 92, 101, 133, 142, 151, 155, 156, 158, 548, 559	
	Wadi Moghra	charcoal fragments, 149	Ysterfontein, 61
Ufefua, 50	Wadi Natrun, 461, 465	controlled use of fire, 59	vertebrates, mammalian, 62
Uhlig, Carl, 384	Wara Formation, 187	micromammals, 59, 148	vertebrates, non-mammalian, 62
Upper Awash river, 256	Warwire Formation, 180	paleoenvironments, 160	
Upper Awash Valley, 257	Webi Shebele River, 169	phytoliths, 156	Zanclean Deluge, 31
Upper Laetolil Beds, 240, 241	Wembere-Manonga	plant remains, 156	Zaire Air Boundary, 136
Uraha Hill, 453	paleo-lake, 179	vertebrates, mammalian, 59, 148	Zeit Wet phase, 31, 462
Usno Formation, 170, 278, 312	vertebrates, mammalian, 179	vertebrates, non-mammalian, 59	<i>Zinjanthropus</i> . See <i>Paranthropus</i>
Vaal River, 120	vertebrates, non-mammalian, 179		
van Hoepen, E.C.N., 120, 127			