	CONTENTS	
	y of the birth of humankind	14
Chapter	One: Formation of the Earth The Big Bang: Appearance of atom Cosmogenesis	21
	Formation of the Milky Way Formation of the Solar System	31
	Formation of the Earth Summary of chapter one	3 ²
Chanter	Two: Abiogenesis	37
Onapter	Here is the Hell Formation of the Moon	39
	Birth of the oceans The calm before the storm	42
	Birth of life Earth bombardment begins Summary of chapter two	46
Chapter	Three: Birth of Metazoa Birth of the first cell	5 1
	Birth of the Archaea Formation of the Earth's magnetic field Formation of tectonic plates	55 57
	Birth of cyanobacteria Birth of the first continent	62
	Oxygen appears in the athmosphere Birth of the eukaryotic cell	62
	Birth of the cell locomotion Birth of the Unikonta Birth of sexes	69
	Birth of the Opisthoconta	7:
	Birth of the life's flag-bearer Birth of the Parazoa	71
	Summary of chapter three	78
Chapter	Four: Birth of the chordates Earth gets ready for the explosion of life	79
	Earth's largest supercontinent breaks down Tissue appears	82 85
	Animal body gets bigger Appearance of the third germ layer Coelom forms	88
	Birth of the second opening Formation of the ozone layer	92
	Birth of the deuterostomes Formation of soil Appearance of pharmacal clits	96
	Appearance of pharyngeal slits Start of swim Formation of brain and heart	99 101 103
_	Summary of chapter four	116
Chapter	Five: Birth of the tetrapods From start to the birth of the chordates	11 7
	Life's Big Bang Cephalization	123 125
	Birth of the fish The broken-down supercontinent Arthropods conquer the land	132 135 137
	Plants move to land Start of hunting	138 139
	To the fresh waters The great extinction Appearance of lobe fins	148 154 155
	Lungs appear in the fish Toward the land	159 161
	On the edge of land Conquering the land Summary of chapter five	165 169 174
Chanter	Six: Birth of the mammmals	175
apter	Gills disappear Timely escape	177 180
	How is the new habitat? Only one fossil	18 ¹
	What's to be done? On the land Oviparity in the land	184 185 187
	The great separation The last supercontinent	193 196
	Teeth evolution starts Animal stands on feet Birth of endothermy	197 198
	Cynodonts Hair appears	199
		202 209
	How was the world? Larger brain, stronger jaws Mammaliamorphs	202 209 213 219
		202 209 213
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates	202 209 213 219 220 224
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals	202 209 213 219 220 224
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down	202 209 213 219 220 224 225 227 228 236 243
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees	202 203 213 219 220 222 223 223 236 243 246 253
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals	202 209 213 219 220 224 225 227 228 232 236 243 246
	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates	202 203 213 213 224 224 225 228 236 246 253 266
	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos	202 203 213 219 220 222 223 232 232 243 243 243 253 262
	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass	202 203 213 219 220 222 222 225 225 226 236 243 246 253 266 268 268 268 274 278 286
	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life	202 203 213 215 226 222 224 225 226 226 226 226 226 226 227 226 226 227 227
	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears	202 203 213 213 213 224 224 225 226 226 227 228 236 246 253 266 268 268 268 274 278 281
	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears	202 203 213 213 213 224 224 225 226 226 227 228 236 246 253 266 268 268 268 274 278 281
	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism	202 203 213 213 224 224 225 228 236 246 246 253 266 268 268 268 274 278 286 286
	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees	202 203 213 219 220 222 222 223 223 223 223 224 225 226 226 227 227 227 227 227 227 227 227
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism Standing on the feet Summary of chapter eight Nine: Birth of the Homo Sapiens	202 203 213 219 220 222 222 222 223 223 223 223 223 224 225 225 226 226 227 227 227 227 227 227 227 228 286 268 268 268 268 268 268 268 27 278 286 286 286 286 286 286 286 286 286 28
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism Standing on the feet Summary of chapter eight Nine: Birth of the Homo Sapiens The bipeds On the boundary of becoming Man	202 203 213 213 224 224 225 225 226 226 227 228 236 246 246 253 266 268 268 268 274 278 286 286 286 286 286 286 286 286 286 28
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism Standing on the feet Summary of chapter eight Nine: Birth of the Homo Sapiens The bipeds On the boundary of becoming Man Homo genus The first Homo species Homo erectus	202 203 213 213 213 224 224 224 225 226 227 228 236 243 246 253 265 265 265 268 268 274 278 286 286 286 286 286 286 286 286 286 28
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism Standing on the feet Summary of chapter eight Nine: Birth of the Homo Sapiens The bipeds On the boundary of becoming Man Homo genus The first Homo species Homo erectus Big-game hunting begins In search of food	202 203 213 219 220 222 222 222 223 223 223 233 233 233
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism Standing on the feet Summary of chapter eight Nine: Birth of the Homo Sapiens The bipeds On the boundary of becoming Man Homo genus The first Homo species Homo erectus Big-game hunting begins	202 203 213 213 213 224 224 225 225 225 226 227 227 227 227 226 226 226 227 227
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism Standing on the feet Summary of chapter eight Nine: Birth of the Homo Sapiens The bipeds On the boundary of becoming Man Homo genus The first Homo species Homo erectus Big-game hunting begins In search of food Evolution of Homo erectus Our direct ancestor?	202 203 213 213 213 224 224 224 225 225 226 227 228 228 236 243 246 253 266 266 268 268 268 268 268 274 278 286 286 286 286 286 286 286 286 286 28
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism Standing on the feet Summary of chapter eight Nine: Birth of the Homo Sapiens The bipeds On the boundary of becoming Man Homo genus The first Homo species Homo erectus Big-game hunting begins In search of food Evolution of Homo erectus Our direct ancestor? Our cousin Summary of chapter nine	202 203 213 213 214 224 225 225 226 226 227 227 227 236 246 246 253 266 268 268 268 268 268 268 268 268 268
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism Standing on the feet Summary of chapter eight Nine: Birth of the Homo Sapiens The bipeds On the boundary of becoming Man Homo genus The first Homo species Homo erectus Big-game hunting begins In search of food Evolution of Homo erectus Our direct ancestor? Our cousin Summary of chapter nine Ten: Conquering the world Our elder brother Homo sapiens sapiens	202 203 213 213 214 224 225 225 226 227 227 227 227 226 226 226 226 226
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism Standing on the feet Summary of chapter eight Nine: Birth of the Homo Sapiens The bipeds On the boundary of becoming Man Homo genus The first Homo species Homo erectus Big-game hunting begins In search of food Evolution of Homo erectus Our direct ancestor? Our cousin Summary of chapter nine Ten: Conquering the world Our elder brother	202 203 213 213 214 224 225 225 225 226 227 227 227 228 228 236 243 243 244 246 253 268 268 268 268 268 268 268 268 274 278 286 286 286 286 286 286 286 286 286 28
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism Standing on the feet Summary of chapter eight Nine: Birth of the Homo Sapiens The bipeds On the boundary of becoming Man Homo genus The first Homo species Homo erectus Big-game hunting begins In search of food Evolution of Homo erectus Our direct ancestor? Our cousin Summary of chapter nine Ten: Conquering the world Our elder brother Homo sapiens sapiens Birth of speech The great leap Conquering the gong Homo sapiens sapiens Birth of speech The great leap Conquering the World Cheming's Big Bang Homo sapiens and Neanderthals	202 203 213 213 213 224 224 225 225 226 226 227 227 227 226 226 226 226 226
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the enones Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism Standing on the feet Summary of chapter eight Nine: Birth of the Homo Sapiens The bipeds On the boundary of becoming Man Homo genus The first Homo species Homo erectus Big-game hunting begins In search of food Evolution of Homo erectus Our direct ancestor? Our cousin Summary of chapter nine Ten: Conquering the world The great leap Conquering the world The mind's Big Bang	202 203 213 213 213 224 224 225 225 226 226 227 227 227 226 226 226 226 227 227
Chapter	Larger brain, stronger jaws Mammaliamorphs Summary of chapter six Seven: Birth of the primates Extinction, again Mammals Animal becomes viviparous Appearance of placenta Pangaea breaks down Birth of the ancestors of today's animals Animal climbs the trees Summary of chapter seven Eight: Birth of the homos Birth of the primates Vision becomes stronger Birth of the monkeys Our ancestors move to Africa Birth of the communal life Appearance of grass Tail disappears Brain gets bigger Ancestors descend from the trees Exercising bipedalism Standing on the feet Summary of chapter eight Nine: Birth of the Homo Sapiens The bipeds On the boundary of becoming Man Homo genus The first Homo species Homo erectus Big-game hunting begins In search of food Evolution of Homo erectus Our direct ancestor? Our cousin Summary of chapter nine Ten: Conquering the world Our elder brother Homo sapiens sapiens Birth of speech The great leap Conquering the world The mind's Big Bang Homo sapiens and Neanderthals Towards today Summary of chapter ten	202 203 213 213 213 224 225 227 228 227 228 227 228 227 228 227 228 228