# CONTENTS

Preface					
Part I. Childhood					
	1	Early Years	3		
	2	War	10		
	3	Living in a Medical Household	18		
	4	Cooperation and Respect	25		
	5	The Dining Room Table	29		
	6	Fossils in the Fire	34		
	7	School	40		
Part II. Youth 5					
	8	University	57		
	9	Vancouver	68		

### viii CONTENTS

10	Mexico	81		
11	Marriage	86		
Part III. Motherhood				
12	Rosemary's Monday	105		
13	Thwarted	119		
Part IV. Return to Research				
14	One Step Sideways	131		
15	Three Steps Forward	142		
16	Daphne Research	162		
17	The Magical Years as a Family on Genovesa and Daphne	182		
18	Teaching and Research in Princeton	193		
19	Interlude in Nepal	201		
Part V. Retirement and Research 21				
20	Retirement	213		
21	Indigenous Peoples	221		
22	Australia	228		

#### CONTENTS ix

23	The Diversity of Asia	234				
24	Return to Europe	249				
25	Where Do We Go from Here?	264				
Acknowledgments						
Appendix A. We Are Not All the Same						
Appendix B. Nicola's Letter to Joel Achenbach, 2014						
Appendix C. Honors and Awards, with						
Some Comments						
Notes						
Index						

# 1

# Early Years

There is grandeur in this view of life, . . . whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.

-CHARLES DARWIN, ON THE ORIGIN OF SPECIES

I entered the Holocene with a bump. My earliest memories are of falling out of a high chair, having my head stitched, and seeing patients waiting to be attended to by my father. So began my happy years of childhood in the English Lake District.

I was named Barbara Rosemary Matchett. However, shortly after my birth certificate was signed, I became Rosemary, my mother having discovered that Barbara was the name of my father's previous girlfriend. I still feel a tinge of her indignation at airports and doctors' offices when I am referred to as Barbara.

My parents were central figures in my early life. My mother was vivacious, energetic, and warmly loving. She introduced me to the joys of listening to the complexities of classical music, and on our daily walks she told me the names and stories of fossils, wild plants, and birds and other animals. My father, a

#### 4 CHAPTER 1

country doctor, had his "surgery" and office in a wing of the house. Those were the days before disposable medical equipment, and much of my mother's time was spent sterilizing instruments and boiling surgical towels, as well as calming frightened patients and arranging appointments—all this while maintaining a large house and a garden with vegetables, fruit trees, hens, and pigs, and keeping control of two, and later three, very lively children.

My father was kind, but his demeanor could be severe. At school, he had received a classical education in Greek and Latin and had a broad knowledge of literature and poetry. He was trained in medicine in Glasgow at a time when tuberculosis was rampant. The disease was so serious and transmission so rapid that an extra year was added to the medical curriculum solely for teaching its diagnosis and treatment. He wanted to become a surgeon, and certainly this was within reach, as he was one of the top three students in his year, graduating cum laude. He opted instead for general practice (family medicine), knowing that it would give him a wide range of medical experience, and because he had to earn money quickly, as he was the second-youngest of his large family. Family medicine was a fortunate choice because it turned out he was unusually gifted in diagnosis. His exceptional skill in diagnosing complicated medical problems became widely known, and hospitals in London occasionally contacted him for help with a particularly difficult case. In addition, he had a passion for engineering. He designed and contributed to the first disposable syringe, now labeled as the "Matchett" syringe in the Science Museum of the Wellcome Collection in London, as well as other medical equipment. His first practice was in partnership with a Dr. Patchett. We used to tease him that "Matchett and Patchett" would have made superb plastic surgeons.

#### EARLY YEARS 5

My brother John, twenty-two months younger than me, and I were constantly in each other's company, there being few children in Arnside. The garden became our secret world, divided into countries with people in each speaking a different, invented language. We lived for hours in this world, going from cold Arctic to hot steamy jungle, creeping through the long orchard grass to avoid tigers, riding camels across the desert, climbing precipitous mountains, and vaulting over rushing mountain becks. Interestingly, our imaginary world with its diversity of countries had *no* wars, even though the Second World War was going on around us in the real world and impacting our lives in many ways (chapter 2).

That real world was the small village of Arnside, on the southern side of the Kent estuary in the southwest corner of England's Lake District. Arnside Knott, a hill only 522 feet high, rises steeply above the village. A climb up its slopes to the top reveals magnificent views across the estuary and beyond to Coniston Old Man, hunched in the foreground, and the other Lake District mountains behind it, each with its evocative Old English name. Throughout my childhood, horses were used to plow the fields and deliver milk and coal. Dr. Grosvenor, my father's predecessor, visited his patients on horseback. In the 1930s, the village had three telephones, the numbers being 1 for the pub, 2 for the vicar, and 3 for the doctor, my father. This shows the priorities of the inhabitants! More telephones were gradually added over time, and so was a telephone exchange as a hub. Every day my mother would send a list of the patients my father planned to visit to the operator at the exchange so that she knew where to reach him in an emergency.

The tranquility of Arnside is shattered twice a day by a tidal bore that roars up the estuary at precise intervals of twelve hours and twenty-five minutes. This leading edge of the incoming tide

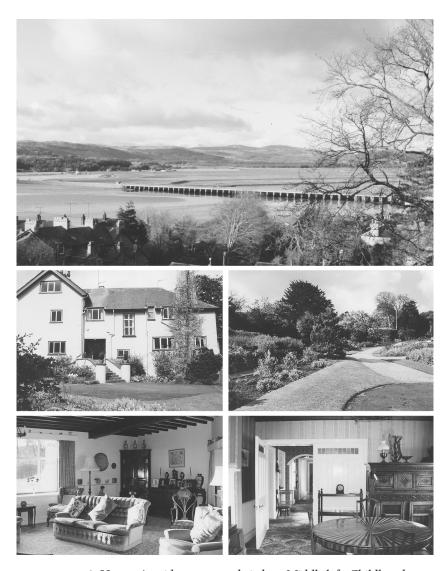


FIGURE 1. Upper: Arnside estuary and viaduct. Middle left: Childhood home, Orchard Close. Middle right: The garden. Lower left: Living room. Lower right: Dining room.

#### EARLY YEARS 7

is forced through the narrow entrance to the river Kent, transforming it into a wave of water only about three feet high but of unbelievable strength. The wall of water roars past Arnside, swirls round as it hits the viaduct, and splits into two, one current passing through the viaduct, the other curling round snakelike to charge in anger back toward the open sea. The strength of the current is such that horses caught in the bore have been knocked over and drowned, and there have been several human fatalities. Today, a siren warns people half an hour ahead of the incoming tide. When I was young, there was no warning; you had to know the times of the tides and how they changed each day. This meant being aware of the phases of the moon, which altered the strength of the gravitational pull, as well as the direction of the wind. We learnt that a small bore at half-moon produces a neap tide, and a large bore at new and full moon a spring tide. A ferociously powerful bore would occur when a strong west wind was behind a spring tide. A spring tide has nothing to do with seasons. The name is derived from the old Anglo-Saxon/ German word springan, meaning "to leap forward." The name of the neap tide is derived from the word *nep*, meaning "lower." This awareness of our surroundings was essential to our survival as we had to resist the temptation to walk out onto the sands to look for stranded fish in pools, collect shells, or get a closer look at the waterbirds—turnstones, redshanks, curlews, sanderlings, shelducks, and Greylag Geese—that feed on the mudflats. Another danger was quicksand, which had accounted for the deaths of many dogs, a few horses, and even humans.

The danger of the bore, a habitual tsunami, was vividly impressed on us one calm summer afternoon in 1944. My brother John and I were perched on a dry tussock covered with Purpleflowering Thrift (*Armeria maritima*), waiting impatiently for the calm waters after the bore and before the turn of the tide,

#### 8 CHAPTER 1

when we were allowed to swim. We had watched the wall of water displace the shelducks, curlews, and turnstones, which flew off screaming as the wave approached them. Simon, our springer spaniel, was paddling for flounders in the shallow pools, bringing them to my mother, who would later cook them for his dinner. Andrew, my three-month-old youngest brother, was asleep in his pram. Then, suddenly, we saw a child floating facedown in the stream of water swirling at speed back toward the open sea. My mother rushed into the fast-flowing current, managed to grab him and turn him upside down, holding him by his legs, and out of his mouth came a mixture of water, vomit, and seaweed. He regained consciousness while my mother was hooking out the remaining seaweed from his mouth, but he was shaking uncontrollably. We wrapped the shivering, sobbing boy in towels and put him at the bottom of Andrew's pram. My mother wheeled him as fast as she could up the steep hill to our house, urging John and me to help push, push. At the house, she told me to hold him, wrapped in a warm towel from the airing cupboard, while she filled a bath with warm water, telephoned the exchange, and told them to get my father, who was visiting a patient, and then the police to find the boy's parents. The boy, who was six or seven years old, recovered, and my father arrived shortly afterward, to my relief, and took over. Eventually, the boy's mother was found, shopping with another women, both totally unaware of the dangers when they left him to play alone on the beach. Even when they came to our house to collect him, they were still remarkably unconcerned. I was afraid they would scold him and hoped my father, who could be stern and very severe, would reprimand the mother before that happened.

Fast-forward forty-three years: Peter and I were hiking in the mountains of Nepal, high up in the Langtang Valley, with a guide, Pasang Sherpa (chapter 19). The three of us had been

#### EARLY YEARS 9

walking for several days. We stayed in huts (teahouses), the type where a wooden shelf for laying down your sleeping bag creates a communal bedroom, and smoke from an open fire used for cooking curls up through a hole in the roof. Pasang was talking to the owners, who were old friends of his. We had seen nobody all day, so we were surprised when two hikers from England walked in and joined us, sitting around the fire as we waited for dinner to be cooked. Chatting with them and exchanging information, I said I was born in the tiny village of Arnside, "which you have probably never heard of."

"Oh, yes, I have," the man replied. "When I was seven, I nearly drowned there and was rescued by the doctor's wife and her daughter!"

I missed the acute awareness of my surroundings when I was sent to boarding school in Edinburgh at age eight and no longer needed to perform the daily tidal calculations. They became important again many years later when we were camping on isolated and uninhabited Galápagos islands, and I had immense joy in once again being aware of the movements and timing of the tides, moon, and stars.

## INDEX

Abbott, Ian, 145-146, 147-148 American Museum of Natural History, Abbott, Lynette, 145–146, 147–148 New York, 92 Abreu, José Antonio, 254, 260 American Society of Naturalists, Abutilon, 151 283-284 amoebae, 64-65 Abzhanov, Arhat, 168-169 Academy of Natural Sciences, Phila-Anangu people, 232 delphia, 283 Anderson, Alan, 229-230 Acanthamoeba, 65 Anderson, David, 162 Achenbach, Joel, 188-190, 279-281 Andersson, Leif: research on Darwin's finches and, 157, 167, 169-170, 172, Adams, Kay, 64-65 adaptive radiations, 142-143. See also 174, 177, 216–217, 250; research on Darwin's finches domesticated pigs and chickens, Adventures with Rosalind (Austen), 181 Animal Minds (Griffin), 197 50 Afghanistan, 119-120 Animals Without Backbones (Buchs-Agius, Dale, 232-233 baum), 59 Akasaki, Isamu, 243 Anjali (now Orange) (grandchild), Alexandrino, Paulo, 255 270 Alfonso X, 258-260 Ann Arbor, Michigan, 132, 134, 148, Allison, James, 284 158, 162, 193, 200 allopatric speciation, 170-173 Antarctic Beeches (Nothofagus Alpine Accentors, 207–208 moorei), 233 Alves, Paulo, 255 Anthropocene, 264–266 *ALX1* (protein), 174, 178 arapaima, 224 ALX1B (gene), 174 Arctic Charr (Salvelinus alpinus), *ALX1P* (gene), 174 65-66, 80, 99-100, 107, 142-143, Amadio, Davide, 261 180 - 181Arizona, 110 Amazon, 222–227, 223 American Kestrels, 195 Arnason, Einar, 107

#### 298 INDEX

Arnside, England: Peter in, 91, 111; RG's childhood in, 3-39, 6, 16, 50-51, 266; RG's visits to, 100; RG's wedding in, 85-86, 91; tidal bore in, 5-9; World War II in, 10-17, 21-22 Ashworth, Connie, 91 Athens, Greece, 125 Atta colombica (leaf-cutting ants), 224 Auerbach, Charlotte, 49-50, 54, 59, 251 Austen, Jane, 49 Australia, 224-225, 228-233, 267 Avebury, England, 121 Aven Armand, France, 256 Ayers Rock (Uluru), 231-232 Baker, Mount, 70–71 ballet, 45-46 bank voles (Clethrionomys), 110–112 Barcelona, Spain, 256–257 Bar-headed Geese, 203

Barrow-in-Furness, 10 Bascompte, Jordi, 260 Bateman, Robert (Bob), 76 Bates, Henry Walter, 143 BBC Home Service (now Radio 4), 27 BBVA Foundation Frontiers of Knowledge Award, 284 Beak of the Finch (Weiner), 189 Beale, Geoffrey, 64-65 Bearded Vultures (Gypaetus barbatus), 207, 238 Bel Canto (Patchett), 133 Bengal Tiger, 203 Benson, Mr. and Mrs., 19–20 Bernardi, Giorgio, 261–262 Bernhard, Prince of the Netherlands,

185 Bigleaf Maples, 71 Billings, Dr., 101–102

biodiversity, 180, 219-220, 226-227, 265–267, 269 Biological Society, 61–62 Black Kites, 230 Black-mantled Tamarins (Saguinus nigricollis graellsi), 222 Blake, John, 226 Blue- and-Yellow Macaws, 222 Bmp4 (gene), 169 Boag, Peter, 158, 162, 166 body odor, 199 Bogotá, Colombia, 218–219 Bonhoeffer, Sebastian, 253–254 Bonner, John, 194 Bonnevie, Kristine, 250, 268 boobies, 150, 163 Boulez, Pierre, 243 Bowman, Robert, 155 Brook, Timothy, 217 Brown, Gordon, 245 Brush Boxes (*Lophostemon confertus*), Brythonic language, 37 Buchsbaum, Ralph, 59 bullying, 48 Burns, Kathleen, 179-180 Bursera, 83, 150, 152-153 Bursera graveolens, 151 butternut trees (Juglans cinerea), 111

calmodulin (CaM), 169 Canada: Expo 67 (Montreal) in, 109-110; Indigenous peoples in, 47, 68–69, 74–78, 267. See also McGill University; Montreal, Canada; University of British Columbia; Vancouver, Canada Canada Jays (Whisky-jacks), 74 Canariomys bravoi, 257

#### INDEX 299

Common Loons (Great Northern cancer, 213, 214 cancer-clone evolution, 179-180 Divers), 62 Candide (Voltaire), 64 Confucius, 235 Conrad, Joseph, 49 Cane Toads, 230-231 continental drift, 35, 47-48 Canyon Wrens, 124 Carnac, France, 122 copepods, 101 Carob trees, 255 Cordia, 83 Castlerigg, England, 30-31, 36, 121 Cordia lutea, 151-152 cats, 134-135 Cork Oak trees, 255 Correa, Rafael, 226 Cavalli-Sforza, Luigi Luca, 197, 236-237 Counce, Sheila, 100–101 Celtic languages, 37 Covid-19, 179, 214 Cowan, Ian McTaggart, 66-67, 70, Cepaea, 107 100 chachalacas, 83 Cox, Allan, 150 Chamaesyce, 151 character displacement, 144, 170-173 Crawford, Miss (geography teacher), charcoal, 96 35, 46–49, 138, 140, 237 Charles Darwin University, 228 Crete, Greece, 125-126 Checkley, Pauline, 105 Crick, Francis, 99 Cross, James, 133 chestnut trees, 255 chickens, 14-15, 181, 203 Croton, 83, 150 Chilean Pines (Araucaria araucana), Croton scouleri, 151 233 Cryptocarpus, 150 China, 234-237, 239 Curie, Marie, 113 Curry, Bob, 162, 183 Choe, Jae, 239-242 choughs, 62, 207 Christian, Keith, 228–229 Dalai Lama, 237-238 climate change, 219-220, 226-227, Daphne, 205 265-267, 268-271 Daphne Major, Ecuador: family life in, 148, 182-190, 183, 280; photo-Cocos Finches (Pinaroloxias inornata), 186-187 graphs of, 165-166; research in, Cocos Island, 186-187 146, 151–152, 154, 157–158, 162– Coen, Enrico, 260 181, 193, 213-214, 216-217 Coleridge, Samuel Taylor, 22–23 Daphnia (water fleas), 101 Collett, Robert, 250 Dartmouth College, 84-85, 140, Colombia, 218-219, 267 194 Common Cactus Finches (Geospiza Darwin, Charles: celebrations of 2009 and, 217-218; Estes and, 189; honors scandens), 152, 162-167, 169, 173-175 and awards of, 214; Peter's research

#### 300 INDEX

Darwin, Charles (continued) doves, 183-184 and, 119; Plinian Society and, 61; dragonflies, 83 RG's schooling and, 50-51; on Drosophila (fruit flies), 63, 64 Dudamel, Gustavo, 254 speciation, 142–143, 172–173 dwarf birches (Betula), 36 Darwin, Northern Territory, 228 Darwin in Galápagos (Grant and dwarf goats (Myotragus), 257 Estes), 189 Darwin Medal, 283 E. O. Wilson Distinguished Naturalist Darwin's finches: allopatric speciation Award, 283-284 and, 170-173; Andersson's research eagles, 207, 247 Ebert, Dieter, 251-252, 253-254 on, 157, 167, 169–170, 172, 174, 177, 216-217, 250; Arctic Charr (Salveliecotourism, 225-226 nus alpinus) and, 180-181; fusion Ecuador, 221-227, 223, 267. See also through introgression and, 170, Galápagos archipelago, Ecuador Edinburgh, Scotland, 40-54. See also 173–176; homoploid hybrid speciation and, 170, 176-178; Peter and University of Edinburgh RG's research on, 143-158, 162-181, education: in Finland, 135-141, 286; 193, 196, 213-214, 215-217, 266 importance of, 267-268; women Darwin-Wallace Medal, 283 and, 52–54, 57, 78, 112–113, 246-247, 250-251 Dasgupta, Partha, 269 deer, 97 El Niño-Southern Oscillation phe-Defoe, Daniel, 184 nomenon (ENSO), 144 Delphi, Greece, 125 elephants, 203 Denisovans, 179, 205 Elsie (housekeeper), 16, 26-27 Devon (grandchild), 270 Enbody, Erik, 175-176 English literature, 49 Dhondt, André, 159 Diamond, Jared, 251-252 EPAS1 (gene), 205 The Epic of American Civilization Diamond Head, Canada, 73-74 Dickens, Charles, 27, 49 (Orozco), 84-85 Dickkopf-3 (gene), 169 Epidaurus, 125 Diodorus Siculus, 263 Eratosthenes, 30 disassortative mating, 199 Erythrina velutina, 151 Dixon, Mr., 19 Española Island, Ecuador, 166-167, DNA, 99, 166 177, 183 Dobzhansky, Theodosius, 63 Estes, Greg, 189 Dod, Mr., 91 ethylenediamine-tetraacetic acid (EDTA), 167 Dostoevsky, Fyodor, 49 Double-barred finches, 228 Etruscan civilization, 262–263 Douglas-firs, 71, 73 eucalyptus, 255

#### INDEX 301

Galápagos (Sitwell), 189 European Meeting for PhD Students in Evolutionary Biology (EMPSEB), Galápagos archipelago, Ecuador: family life in, 146, 148, 182-190, 279-281; evacuated children, 13-14 kleptoparasitism in, 107–108; photo-Everest, Mount, 49 graphs of, 149, 165-166; research Evolutionary Dynamics of a Natural in, 143-158, 162-181, 193, 196, Population (Grant and Grant), 213-214, 215-217, 266. See also 157-158 Darwin's finches Expo 67 (Montreal, Canada), Galápagos Mockingbird, 158 109-110 Gallotia goliath, 257 Gangotena, Santiago, 214 fairy shrimps, 193 Garson, Alfred and Crystal, 132-133 Garson, Deborah (Borra), 132-133 Falconer, Douglas, 49-50, 54, 62-63 Ferrand, Nuno, 255 Gaudí, Antoni, 256 Ficus, 83 Gault, Andrew Hamilton, 114 fiddler crabs, 184 gender roles: dating and, 73; in Mexfield voles (Microtus), 110–112 ico, 83–84; women's education and, 52-54, 57, 78, 112-113, 246-247, Finland, 135–141, 250, 251–253, 286 250 - 251Finnegan, Cyril, 78 genetic fingerprinting, 166–168 First Nations Voice, 232-233 genetics: allopatric speciation and, 170-Flightless Cormorants, 216 173; Arnason and, 107; Bonnevie FLQ (Front de libération du Québec), and, 250; fusion through introgression and, 170, 173-176; homoploid 133 flying foxes (fruit bats), 228 hybrid speciation and, 170, 176-178; RG's courses on, 198-199; RG's 40 Years of Evolution (Grant and Grant), 169 education and, 60-61, 62-66, 99-101; RG's research and, 80, fossils, 3, 34–35, 118, 257 164-181. See also Darwin's finches Foster, Bristol, 76–77 Genovesa Island, Ecuador: family life France, 121–122, 256, 260–261 Franklin, Rosalind, 99 in, 182-190, 264, 280; Lack on, French language, 122, 132 144; photographs of, 149; research Friend, Dr., 59 in, 148-158, 162, 173, 193, 215-216 Frink Medal, 284-285 George (camp neighbor in Kotor), 127 fruit bats (flying foxes), 228 George (Mary Jackson's boyfriend), 70-72, 74, 93 Fuller, Buckminster, 109 fur seals, 163 Geospiza conirostris (now G. propinqua,

Large Cactus Finches), 144–145,

152-154, 156-158, 177-178

fusion through introgression, 170,

173-176

#### 302 INDEX

Geospiza difficilis (now G. acutirostris, Sharp-beaked Ground Finches), 153, 156-158 Geospiza fortis (Medium Ground Finches), 152, 157, 162-163, 170-175, 176-178 Geospiza fuliginosa (Small Ground Finches), 173, 175 Geospiza magnirostris (Large Ground Finches), 153, 156-158, 169, 171-172, 178 Geospiza scandens (Common Cactus Finches), 152, 162–167, 169, 173-175 Gibbs, Lisle, 158, 162 Gingy (cat), 134-135, 135 glacial refugia, 71-72, 80 Glanville Fritillary (Melitaea cinxia), 252 goats, 97 Gogh, Vincent van, 238, 261 golden plovers, 109 goshawks, 247 Granada, Spain, 257-260, 259 Grant, Nicola: childhood and education of, 101–102, 105–109, 114–118, 122-128, 131-135, 148, 193; in Galápagos archipelago, 146, 148, 158, 182-190, 279-281; higher education and career of, 84, 140, 190, 194; motherhood and, 124; in Nepal, 190, 201-204; in Peru, 190-192; photographs of, 115, 117, 183, 270; in Princeton, New Jersey, 195–196 Grant, Peter: in the Amazon, 222-226; in Arnside, England, 26–27, 91, 111; in Australia, 228-233; children and, 101–102; in China, 234–237; colon cancer and, 213; engagement and

marriage to RG and, 86-87, 91, 92; family and childhood of, 79; fatherhood and, 113-118, 133, 134-135, 280; in Finland, 252–253; in France, 122, 261; in Galápagos archipelago, 145-158, 162-164, 176-177, 182-190, 214, 215-217, 264, 280; in Greece, 119-120, 122, 123-126; honors and awards of, 214, 283-286 (see also Kyoto Prize); in Iceland, 106-109; in Japan, 33, 242-248, 244; in Montreal, Canada, 102, 105-106, 109-120, 131; in Nepal, 8-9, 15, 203-209; in Oxford, England, 119-120; in Peru, 190-192; PhD project in Mexico and, 73, 80–84, 86–91, 93–99; photographs of, 75, 92, 115, 117, 160, 183, 206, 244, 270; at Princeton University, 162, 167, 193-194, 195, 196, 215; research on nuthatches (Sitta) and, 119, 123-128, 170; research on speciation and, 79-80, 142-143, 172 (see also Darwin's finches); retirement and, 214-215, 217-220; in South Korea, 239-242; in Sweden, 159-161; in Switzerland, 253-255; in Tibet, 48–49, 237–238; at University of Michigan, 162; in Vancouver, Canada, 72-80, 92-93, 99-100, 217; World War II and, 13-14, 79; at Yale University, 100-101 Grant, Rosemary: family and childhood of, 3-39; grandchildren of, 195-196, 270; honors and awards of, 214, 283-286 (see also Kyoto Prize); motherhood and, 100, 101-102, 105-110, 112-118, 119-128, 131-135; PhD project and, 158-161; photographs

#### INDEX 303

of, 6, 115, 117, 160, 165–166, 183, Grouse Mountain, 78 206, 265, 270; as research assistant at Guarda, Switzerland, 253–254 Yale University, 100-101; research on guillemots, 62 gulls, 109, 150, 163 speciation and, 79-80 (see also Darwin's finches); as research scholar and teacher at Princeton University, H5N1 (virus), 179 167, 193-194, 196-199; retirement Haida Gwaii (Queen Charlotte Isand, 214-215, 217-220; schooling of, lands), 76–77 Haida people, 76–77 40-54; as student at University of Edinburgh, 57-67; as teacher at Uni-Haldane, J. B. S., 61 Hanski, Ilkka, 251-252 versity of British Columbia, 66-82, 93; as teacher in Montreal, Canada, Happy Wrens, 97 Harlequin Ducks, 107 131–132, 138–141; teacher training and, 131-132, 135-141; travel and Harrer, Heinrich, 48-49, 237 Harvard University, 168 (see specific countries) Grant, Thalia: in the Amazon, 222-Hawaiian honeycreepers, 143 226; childhood and education of, Heath, Edward, 113 107-109, 111, 114-118, 122-128, Hebe (Veronica), 143 131-135, 140, 148, 193; in Galápa-Heisey, Anne, 162 gos archipelago, 146, 148, 182-190, Heliotropium, 151 213-214; higher education and Helsinki, Finland, 251–252 career of, 189, 194; in Peru, 190-192; Hen Harriers, 62 photographs of, 115, 117, 160, 183, hepatitis A, 96 Herculaneum, Italy, 261-262 270; in Princeton, New Jersey, 195-196 Herdwick sheep, 25, 37-38, 250 Herschel, Caroline, 250-251 Gray Plovers, 62 Gray Seals, 62 Herschel, William, 250 Heyerdahl, Thor, 184 Gray Warbler-Finches (Certhidea fusca), 153 Hillary, Edmund, 49 Gray Wolves (Canis lupus), 36 Himalayan Monals, 203 Great Gray Owls, 252 Hisako, Princess Takamado, 245 Great Northern Divers (Common HMGA2 (protein), 172, 178 Loons), 62 HMGA2L (gene), 172 HMGA2S (gene), 172 Great Wall of China, 235–236 Greaves, Mel, 179-180 Hoatzin, 222-224 Greece, 119–120, 122, 123–126, Hoeck, Hendrik, 218 262 Hoffmann, André, 261 Hoffmann, Luc, 260-261 Griffin, Donald, 197 Grosvenor, Dr., 5 Holloway, Ross, 262

#### 304 INDEX

Hollyburn Mountain, 78 International Association for Ecology Holocaust, 17 (INTE-COL), 239–240 Holocene, 264-266 International Balzan Prize, 284 homoploid hybrid speciation, 170, International Ornithological Congress 176-178 (Beijing, 2002), 234–237 Introduction to Quantitative Genetics honey-creepers, 228 Hoop Pines (Araucaria cunninghamii), (Falconer), 63 Inuit peoples, 47, 74–76 233 Hopkins, Ernest, 85 Ipomoea, 150, 151 Horn, Henry, 194 Iran, 119-120, 121 horsetail (Equisetum), 35 Isacks, Bryan, 48 Hudson, Dr., 13 Istanbul, Turkey, 122-123 Human Diversity (Lewontin), 197 Italy, 128, 261-263 Humboldt, Alexander von, 82, 251 Iwasa, Yoh, 246 hummingbirds, 116, 218 Hussain, Zakir, 202 Jackson, Mary, 70-72, 74 Hutchinson, Evelyn, 100, 101 Japan, 33, 238–239, 242–248, hybrid iguanas, 163 244 Jarvis, Erich, 108 Jefferson, Thomas, 82 ibises, 228 Iceland, 65-66, 106-109, 180-181, 250 Jeffreys, Alec, 166 Icelandic language, 108 Jeizinen, Switzerland, 254–255 "In Flanders Fields" (McCrae), Jennersten, Ola, 159 Jeong, Gilsang, 242 12.7 Jerry (Jeremiah Swindlehurst), 16, Inamori, Kazuo, 33, 245, 284 inbreeding, 208–209 27-28, 41, 51 Inca people, 190-192 Jo (aunt), 41–42, 49–50 Julian (fisherman), 96–97 Indian Rhinoceros, 203 Julius Caesar, 51 Indigenous peoples: in Australia, junglefowl, 14-15, 203 224-225, 228-233, 267; in Canada, 47, 68-69, 74-78, 267; climate juniper trees (Juniperus), 36 change and, 268-269; in Colom-Jura, Scotland, 61–62 bia, 218-219, 267; in Ecuador, 221-Jyväskylä, Finland, 252 227, 223, 267; in North America, Jyväskylä University, 252 224-225 Ingstad, Anne Stine, 111 Kakadu National Park, 229-230 Ingstad, Helge, 111 Kalff, Evelyn, 105, 106 Institute of Animal Genetics, 49, 54, Kalff, Jaap, 105 63-64, 100 Kandel, Eric, 197

#### INDEX 305

Kato, Makoto, 246 Leidy Award, 283 Kavála, Greece, 123-125 Leonardo da Vinci, 192, 261 Lerner, Michael, 63 Kazantzakis, Nikos, 124 Keller, Lukas, 213 letter writing, 44–45, 86–91, 148, 209, Killdeer, 195 214 Kim, Jongmin, 242 Levin, Simon, 269 Kinnaird, Margaret, 158 Lewontin, Richard, 197 Kinsman, David, 66 Lima syndrome, 133 kleptoparasitism, 107–108 Linnean Society, 283 Knox, John, 44 Lishman, Miss, 40 Litchfield National Park, 229-231 Korean Pines, 240 Kotor, Montenegro, 127 Litoria dahlii, 230 lizards, 143, 184 Kreitman, Marty, 167 Kunz, Thomas, 214 logrunners, 233 Loiselle, Bette, 226 Kyoto, Japan, 242-247, 244 Kyoto Prize, 33, 243-245, 244, Lord of the Rings (Tolkien), 184, 284 280 Lorenz, Konrad, 155-156 LPA1 (virus), 179 Lack, David, 143-146, 156, 170, 172 - 173Lubin, Yael, 148 lyrebirds, 233 Lady Chatterley's Lover (Lawrence), 49 Lalande, Jérôme, 250 Lamichhaney, Sangeet, 172, 174, Machu Picchu, Peru, 190-192 Maddocks, Simon, 229 177 Lammergeiers (Gypaetus barbatus), Madison, Wisconsin, 201 207, 238 Magpie-larks, 228 L'Anse aux Meadows, 111–112 malaria, 203 Laporte, Pierre, 133 Mallarino, Ricardo, 168-169 Large Cactus Finches (Geospiza maple trees, 71, 205 conirostris, now G. propingua), Mappes, Johanna, 252 144-145, 152-154, 156-158, Margulis, Lynn, 214 177 - 178Marine Iguanas, 163 Large Ground Finches (Geospiza mag-Marley, Carlo C., 179-180 nirostris), 153, 156-158, 169, 171-Masked Lapwings, 228 172, 178 Maskelyne, Nevil, 250 Lava Herons, 185 Matchett, Andrew: childhood and Lawrence, D. H., 49 education of, 8, 15, 26, 51-53; interests and career of, 276-277; photo-Leeming, Mrs., 19–20 Leibniz, Gottfried Wilhelm, 64 graphs of, 12, 16

#### 306 INDEX

Matchett, Dr. (father): medical prac-Metropolitan Opera, New York, 92 tice and, 3-5, 18-22; Peter and, 86, Mexico, 73, 80–84, 86–91, 93–99 Mexico City, Mexico, 98-99 100; photographs of, 12, 92; RG's MHC (major histocompatibility comchildhood and, 3-5, 8-22, 29-33, 50-54; RG's education and, 50-54, plex), 199 57, 61, 68-69; RG's wedding and, 91 microsatellites, 166 Matchett, John: childhood and educa-Middleton, Christine, 46 tion of, 5, 7-8, 11, 14-16, 18-20, 31, Middleton, Miss, 45–46 34–35, 51–53; interests and career Milstein, Nathan, 193 of, 275-276; in Japan, 243; photo-Minoan civilization, 126, 263 graphs of, 12, 16 Miocene, 265–266 Matchett, Moira, 243 misinformation, 137-138 Matchett, Mrs. (mother): in Canada, Miss Edgars and Miss Cramps School 106; family and childhood of, 79; (ECS), Montreal, 131-132, Peter and, 100; photographs of, 12, 138-141 92; RG's childhood and, 3-5, 8-17, Misso, Michael, 231-232 21-22, 25-36, 50-53; RG's educa-Mitla, Mexico, 95, 98 mockingbirds, 162, 183 tion and, 58 Matchett syringe, 4 Mont Saint-Hilaire, Canada, 110, Matheuz, Diego, 254 114-116 Matthaei, J. Heinrich, 99 Monte Albán, Mexico, 98 May, Robert, 193-194 Montenegro, 127 McCrae, John, 127 Monteregian Hills, Canada, 114 McGill University: honorary degrees Montreal, Canada, 102, 105-106, by, 285; Peter as professor at, 102, 109-120, 131-135, 164, 187, 200 105-106, 110-112, 114-116, 119, Montúfar, Carlos, 214 131, 145-146 Moose (Alces alces), 36 McIntyre, Mr., 29-31 Morpho, 222 McKaige, Maryanne, 229-230 Mouflons, 38, 120 McLennan, Scott, 202 mound-building megapodes, 228 Medawar, Peter, 49-50, 112-113 Mountain Hemlocks, 71 Media Literacy Index, 137 Muhammad XII, 258 Medium Ground Finches (Geospiza music: in China, 235, 236; in Italy, 261; in Japan, 245; John and, 275-276; fortis), 152, 157, 162–163, 170–175, 176-178 Matchett family and, 3, 50; Nicola Mendelssohn, Felix, 91 and, 132, 186, 190, 193, 202, 280; in Merlins, 62 Princeton, New Jersey, 195; RG's schooling and, 46, 49; social change Metropolitan Museum of Art, New York, 92 and, 254, 260; in South Korea, 239,

#### INDEX 307

240; in Switzerland, 254; Thalia	Olympic Elks (Cervus canadensis roo-
and, 186, 193; in Tibet, 237	sevelti), 72
Mývatn (Lake of Midges), Iceland, 107	Olympic Marmots ( <i>Marmota olympus</i> ), 72
	Olympic Peninsula, 71–72
Nakamura, Hiroshi, 246	Open Society Institute, 137
Nanook of the North (film), 47	Opuntia, 183–184
Naples, Italy, 261–262	Opuntia helleri, 151–153
Nasutitermes triodiae, 231	Orellana-Rovirosa, Felipe, 147
National Institute of Ecology, South Korea, 241–242	Origin of Species (Darwin), 50–51, 217
National Theatre, London, 109	Orozco, José Clemente, 83–85
Neanderthals, 179	Orwell, George, 49, 62
Neotropical otters (Lutra longicaudis),	otters, 62, 224
224	Oxford, England, 119–121
Nepal, 8-9, 15, 201-209	
Nepali language, 201-202, 204	Paestum, Italy, 261–262
New York, 91–93	paradise flycatchers, 203
Newfoundland, 111-112, 250	Paradise Riflebirds, 233
Nicklas, Bruce, 100-101	parallel cultural change, 221
1984 (Orwell), 62	Paramecium, 64–65
Nirenberg, Marshall, 99	Pasang Sherpa, 8-9, 204-209, 206
Nordhaus, William, 284	Patchett, Ann, 133
Norgay, Tenzing, 49, 204	Patchett, Dr., 4
Norway, 250–251	pelicans, 163
Notes for Introductory Courses in Gene-	Perahia, Murray, 193
tics (Auerbach), 59	Peregrine Falcons, 62
Nuralegus rex, 257	Persepolis, Iran, 120
nuthatches (Sitta), 119, 123–125, 170	Peru, 190–192
	petrels, 150, 163
oak trees, 143, 205	Petren, Ken, 213
Ohio Wesleyan University, 285	petroglyphs, 230
oil exploitation, 225–227	PetroOriental, 226
Okada, Norihiro, 246	pigs, 15, 16, 97, 181
Oliver, Jack, 48	pikas, 207
Oliver, Laurence, 109	pine trees, 205, 247, 255
Olivia (grandchild), 270	PISA (Program for International As-
Olympic Chipmunks (Neotamias	sessment), 137
amoenus caurinus), 72	plate tectonics, 48

#### 308 INDEX

Plinian Society, 61–62 polyandry, 209 Pompeii, Italy, 261–262 Porto, Portugal, 255 Portugal, 255-256 Potter, Beatrix, 21, 38 Poultry Research Center, 49-50 The Pre-Columbian Golden Age (Orozco), 84-85 Price, Trevor, 158, 162, 176-177, 214 Princeton, New Jersey, 194-196 Princeton University, 162, 167, 193-194, 195-199, 215, 216, 285-286 Principles of Embryology (Waddington), 78 Puerto Vallarta, Mexico, 82–83, 93-96, 95 puffins, 107-108, 109 Purple-flowering Thrifts (Armeria maritima), 7-8Qin, Emperor of China, 235-236, 260

Qin, Emperor of China, 235–236, Qingbo, Duan, 236, 260 quantitative genetics, 62–63 Quebec, 133 Queen Bee effect, 251 Queen Charlotte Islands (Haida Gwaii), 76–77 Quetzalcoatl, 84

racism, 45, 60, 195, 219–220 Rainbow Bee-eaters, 228 Rainbow Pittas, 229 Rajul (grandchild), 270 Ramos, Margarita, 218 Ratcliffe, Laurene, 154, 158, 162 ravens, 62, 207 Ravi (Nicola's husband), 243

Red Deer, 62 Red Junglefowl, 14–15 Red Leghorn chickens, 14-15 Red Pandas, 207 Regula (Swiss trekker), 207, 209 Reid, Iljuwas Bill, 76–77 Reith Lectures, 27 religion: in China, 235, 236-237; in Colombia, 219; early American civilizations and, 81; inbreeding and, 208-209; Matchett family and, 31-33, 276; RG's schooling and, 44; RG's wedding and, 91; in South Korea, 239; in Spain, 258-260 retirement, 214-215, 217-220 Reyer, Uli, 213 rhododendrons, 205 Richards, Mark, 147 "Rime of the Ancient Mariner" (Coleridge), 22-24

"Rime of the Ancient Mariner"
(Coleridge), 22–24
Ringed Plovers, 62
river dolphins, 224
Rivera, Diego, 83–84
RNA, 99
Robinson Crusoe (Defoe), 184
Rockefeller, Nelson, 85
Rome, Italy, 262
Rosemary Grant Advanced Award, 285

Rosenqvist, Gunilla, 159

Roy, Uma, 202 Royal Concertgebouw, Amsterdam, 109 Royal Medal, 283 Royal Scottish Geographical Society, 49

Royal Society, 112–113, 249, 250–251,

Rothschild Report (1971), 112–113

283

#### INDEX 309

Short-eared Owls (Asio flammeus), 76, Rubenstein, Dan, 194 Rubin, Carl-Johan, 174, 175-176 184 Sida, 151 Russian Federation, 137 Silk Road, 235–236, 238 Sima Qian, 235 Saariaho, Kaija, 284 Safdie, Moshe, 109 Sinclair, Ian, 65 Saga of Erik the Red (Icelandic saga), 111 Siona people, 222-226 Sailfish, 97 sitar, 190, 202 Saint George's School, Edinburgh, Sitka Spruces, 71 40-54 Sitta neumayer, 119, 123-125 Sanders Theatre, Cambridge, Massa-*Sitta tephronota*, 119, 123–125 chusetts, 202 Sitwell, Nigel, 189 Skaana—Killer Whale, Chief of the Santa Cruz Island, Ecuador, 146 Undersea World (Reid), 77 Sapporo, Japan, 248 Skomer, Wales, 111 Saraakallio rock paintings, Finland, skuas (Stercorarius), 107-108 252 - 253Sarah (Peter's half sister), 125 slavery, 82, 84-85 Small Ground Finches (Geospiza fu-Sars, Georg, 250 Schluter, Dolph, 150, 158, 214 liginosa), 173, 175 Smith, Jamie, 148, 183, 214 Scottish National Orchestra, 49 Scudder, Geoff, 78 Smith-Johannsen, Herman ( Jackrabsea lions, 163, 216, 280 bit), 114-116 sea squirts, 132-133 snow scorpionflies (Boreus elegans), 78 Seutin, Gilles, 166–167 Seven Years in Tibet (Harrer), 48-49, Society for the Study of Evolution, Seville, Spain, 260 South American Sea Lions, 216 sex education, 132-133 South Korea, 238-242 Spain, 253, 256-260, 259 sexual imprinting, 155-156 speciation: allopatric speciation and, shags, 62 170-173; fusion through introgressharks, 163, 187 Sharp-beaked Ground Finches sion and, 170, 173-176; homoploid hybrid speciation and, 170, 176-178; (Geospiza difficilis, now G. acutirostris), 153, 156–158 Peter and, 79-80, 142-143, 172. See shearwaters, 163 also Darwin's finches sheep rearing, 25, 37–38, 120, 250 Spirit of Haida Gwaii (Reid), 77 Squires, Dr., 120 Sherry, Tom, 186-187 ß-catenin (gene), 169 Shining Path (Sendero Luminoso), 191-192 Stefan (Swiss trekker), 207, 209

#### 310 INDEX

stone-curlews, 228
Stonehenge, England, 30–31, 36, 121
Surtsey, Iceland, 109
Suzuki, Tohru, 243–245, 244, 247
Swallow-tailed Gulls, 150, 163
Swann, Michael, 66–67, 113
Sweden, 158–161, 167, 169–170, 175–176, 250
Swindlehurst, Jeremiah (Jerry), 16, 27–28, 41, 51
Switzerland, 128, 208–209, 250, 253–255
Sword-billed Hummingbird, 218
Sykes, Lynn R., 48

Tabebuia, 83 Tabin, Cliff, 168–169 Tanaka, Seiichi, 202 Taoism, 236-237 Tawny Frogmouths (Podargus strigoides), 229 teaching and teacher training, 131-132, 135-141, 196-199, 228-229 Teatro alla Scala, Milan, 109 Tepic, Mexico, 93-94, 96 Terborgh, John, 194 terns, 107 terrorism, 133, 191-192 TGFßIIr (gene), 169 Tharu people, 203 Thatcher, Margaret, 113 Thera (now Santorini), Greece, Thom, Alexander, 36, 121–122 Tibet, 48-49, 237-238 Tibetan Eared Pheasants, 238 tidal bore, 5-9 Tilghman, Shirley, 197, 198–199

Tolkien, J. R. R., 184, 280

Tolstoy, Leo, 49, 280 tortoises, 124 Tres Marías islands, Mexico, 80, 87–91, 93, 96–98 *Tribulus*, 170–172, 178 tropicbirds, 150, 163–164 Trudeau, Pierre, 133 tuna, 163 Turkey, 119–120, 122–123 Turnbull, Malcolm, 232–233 turtles, 163

Ukraine, 137

Ulfstrand, Staffan, 158-159, 160 Uluru (Ayers Rock), 231–233 "Uluru Statement from the Heart" (2017), 232-233United Nations (UN), 139-140, 226, 268-269 Universidad de Los Andes, 218 Universidad San Francisco de Quito (USFQ), 214, 216, 226, 285, 286 University of British Columbia, 66-82, 75, 93, 99-100, 105, 214, 217 University of California in Santa Cruz, University of Edinburgh, 49-50, 54, 57–67, 100, 266 University of Gothenburg, 158 University of Helsinki, 286 University of Michigan, 148, 158, 162, 193 University of Oslo, 250 University of Toronto, 285 University of Zürich, 253-254, 285 Upadhyaya, Hom Nath, 202 Uppsala University, 158–161, 167, 169–170, 175–176, 250

Ural Owls, 252

#### INDEX 311

Whinchats, 62 Vaccinium (blueberry), 86 Valle, Carlos, 214, 216-217 whipbirds, 233 Whisky-jacks (Canada Jays), 74 Vancouver, Canada, 66-82, 75, 92-93, White-cheeked Pintails, 151 99-100, 214, 217 Venezuela, 254 Whitetip Reef Sharks, 187 Venice, Italy, 261 wild grapevines (Vitis riparia), 111 Vermeer's Hat (Brook), 217 Wild Horses (Equus ferus), 36 Veronica (Hebe), 143 Wildlife Publications Award, 157 Victoriano (Siona elder), 222–225, Will, Tom, 162 willows (Salix), 36, 109 women's education, 52-54, 57, 78, Vík í Mýrdal, Iceland, 107–109 Voltaire, 64 112–113, 246–247, 250–251 Vries, Cecilia de, 222-226 Wood Thrushes, 195 Vries, Tjitte de, 185, 222-226 World War II, 10-17, 21-22, 79 Wright, Sewall, 63 Wu Zetian, 236 Waddington, Conrad, 54, 62-64, 78, Wallace, Alfred Russel, 142-143 Xie, Ruopeng, 179 Waltheria, 151 Waltman, Jim, 162 Yahara, Tetsukazu, 246 Waorani people, 226 Yale University, 100–101 War and Peace (Tolstoy), 280 Yasuní Biosphere Reserve, Ecuador, war prisoners, 15-17 226 Watson, James, 99 Yellow-crowned Night Herons, 185 Watts, Jonathan, 227 Yugoslavia, 119-120, 126-128 "Wedding March" (Mendelssohn), 91 Wegener, Alfred, 47-48 Z sex chromosome, 175 Weiner, Jonathan, 189 Zapata, Marcos, 192 Zapotec culture, 98-99 Wells, Michael, 162 Werner, Tracey, 186-187 Zelkova serrata, 242 Wessex Saddleback pigs, 15, 16 Zoological Society of London (ZSL), Western Hemlocks, 71 284-285 Western Red-cedars, 71 Zorba the Greek (Kazantzakis), wheatears, 62

Zürich, Switzerland, 254

whimbrels, 62