

'A captivating and absorbing account'

DAVID ATTENBOROUGH

Thank You, Madagascar

The Conservation Diaries
of Alison Jolly



With a Foreword by
HILARY BRADT

About the author

ALISON JOLLY (May 9, 1937–February 6, 2014) was a primatologist known for her studies of lemur biology. She wrote for both popular and scientific audiences and conducted extensive fieldwork on lemurs in Madagascar, primarily at the Berenty Reserve, a small private reserve of gallery forest set in the semi-arid spiny desert area in the far south of Madagascar.

Thank you, Madagascar

*The conservation diaries
of Alison Jolly*



ALISON JOLLY



Zed Books
London

*To all the people of Madagascar
who work for the good of their country.*

*And especially to my friend and colleague
Dr Hantanirina Rasamimanana*

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And then I thank my wonderfully supportive family: my husband of fifty years Richard Jolly, and my four children, Margareta, Susan, Arthur and Richard Brabazon Jolly.

Foreword

Alison Jolly was known in the academic world for her ground-breaking work as a primatologist, but somehow that title feels wrong. It conjures up the image of a soulless scientist, whilst Alison was one of the warmest, funniest and most passionate women that you could meet. More than any other person she was instrumental in initiating me, so by extension the thousands who read my guidebooks to Madagascar, into a 38-year love affair with the island in all its diversity and complexity.

I first came to Madagascar as a tourist in 1976, with zero knowledge of the wildlife. When I saw my first lemurs in Nosy Komba I thought the sexually dimorphic black lemurs (only the males are black) were two different species. By that time Alison had been studying ring-tailed lemurs in Berenty for fourteen years and was *the* expert on the subject. So when I was asked to lead a pioneering tour of Madagascar in 1982 I bought her book *A World Like Our Own: Man and Nature in Madagascar*. It completely changed my life. Here was a description of all aspects of this lovely, but challenging country, with intimate portraits of lemurs but also of the people and the dilemmas of promoting conservation in a remote island where poverty is rife. In that book I also ‘met’ Richard Jolly in the dedication. ‘Tell the whole story,’ he said; ‘ecology with people, not just your animals.’ And that’s what she did, with Richard’s continuing encouragement, for the rest of her life. Lemurs were only part of the picture, not the obsessive whole, because she knew and understood the people—from dignitaries to peasants—as well as she knew the lemurs. *A World Like Our Own* showcased Alison the writer. Her talent for narrative and description is the equal of the very best of our travel writers, and brought the island of Madagascar to the notice of the general public for the first time. For a while we had a lively correspondence about the possibility of my reissuing the book as a paperback, which sadly never happened, but it gave me an excuse to get to know her and she was a generous contributor to many editions of my guidebooks.

Alison was surely the funniest primatologist ever; not, I think, through any conscious effort, but because that’s how she was. Her humour was infectious. You might start a serious discussion about lemur behavior but end up hooting with laughter over the lighter side of Madagascar. Also Alison was as anthropomorphic about lemurs as the rest of us. When the albino lemur Sapphire (subject of a TV programme) died, she told me ‘The death of Little Nell was nothing compared with our reactions to the demise of this little lemur.’ Where she was absolutely serious, however, was when discussing conservation issues where her views were her own and based on her intimate knowledge of the country, rather than popular but less informed, opinion. Thus she came down firmly on the side of the controversial Rio Tinto titanium mine—and I can’t imagine that anyone listening to her arguments could have disagreed with her. As she said: ‘If you think that people and forest will somehow muddle through before the hills are scraped as bare as Haiti, then there is no reason to think that money and an organization will improve life. If you look at the statistics of forest loss, you opt for the mine.’

Perhaps her most accessible book of all was *Lords and Lemurs: Mad Scientists, Kings with Spears and the Survival of Diversity in Madagascar*. It is Alison at her best: funny, fascinating and

illuminating. Anyone who has been to, or is thinking of going to, Berenty can enjoy it.

~~So we come to her last book, dictated during the final months of her life, but based on the diaries~~ she wrote during all those changing decades in Madagascar. And as you read you understand that she wrote because she had to. Her work in Madagascar threw up so many triumphs, frustrations, joys and disappointments that a natural writer like Alison *needed* to record them. And how lucky we are that she could do it so well, and that Zed Books is bringing these unique accounts to all those who love Madagascar, whether tourist, nature lover, dedicated conservationist or professional primatologist. What a legacy!

Hilary Bra

My adventurous and astonishing mother

Alison Jolly overturned established thinking after becoming the first scientist to do an in-depth field study of the behaviour of the ring-tailed lemur, *L. catta*, beginning work in Madagascar in 1962 as a young graduate from Yale. She discovered that this species—and as it turned out almost all other lemurs—have female dominance over males, breaking the then orthodoxy that primates were male-dominant. As she later joked, the ‘king’ of the DreamWorks animation *Madagascar* ought to have been a queen.

My mother saw the ring-tails as pugnacious, swaggering, but also formal to the point of ritual and ever so maternally doting.¹ She herself was not pugnacious at all, though she did indeed dote upon me and her three other children. Nor did she swagger, though as a nearly six foot American in her characteristically loud shirts, beads and sneakers, she cut a very visible figure in Lewes, the small English town in which she made her home. She was a gentle woman, with a lyrical, sing-song way of speaking, who on the rare occasions when hurt or cross would retreat into a detective novel with a glass of sherry (or whisky if very out of sorts), and a bowl of salted cashews. She saw the world as a place where humans could be cruel but wonderfully amusing, and where animals, plants, trees and seas, would always be more magical than any human invention.

Such a gentle sense of wonder is one of the reasons this book exists. Based on diaries written over the decades of her visits to Madagascar, it shows her hope that even such a complex and impoverished country could achieve a balanced ecology, although, like evolution itself, it might be slow and painful. This belief, and her love of her fragrant research site at Berenty, kept her writing. What follows is a unique insider’s account of a major conservation effort in one of the world’s most iconic biodiversity hotspots. But these diaries are also powered by her pleasure in storytelling, where accounts of policy-making and science conferencing, community discussion and conservation camping, were also farces, romances and natural comedy, even when they expressed political tragedy.

Her sometimes mischievously literary eye came from her upbringing. Growing up in the hill university town of Ithaca, New York, she was the only child of the artist Alison Mason Kingsbury and the humorist and Cornell scholar Morris Bishop. Neither of her parents was remotely left-wing, but they were sophisticates with wonderful taste and humanity. East Coast Europhile Americans, their favourite writers included Dante and Proust, and they always dined with side plates and silver. Her father, whose light verse was regularly published in the *New Yorker*, taught her to observe ‘truth with laughter, not with tears,’² her mother to see beauty and order in the landscape. Mason Kingsbury, a sometime muralist for New York’s Radio City Music Hall who was also supported by the Federal Art Project in the 1930s, proved that a woman could be as professional as a man.³

Her mother’s model proved to be the one that my mother adopted, combining mothering and wifehood with a largely self-directed career, in part made possible by an inheritance from her grandfather Albert Kingsbury, who had established a lucrative engineering business in 1912. But in many other ways, Alison broke with her parents’ genteel Anglo-Europeanism. Choosing science

choosing Madagascar, she threw off the corset and girdle, though not all of the side plates and silver to join a set of brilliant women who came of age in the 1960s as the pioneers in the new field of primatology. Mum's work can be set alongside that of Jane Goodall,⁴ Dian Fossey and Biruta Galdikas, who have made the lives of chimpanzees, gorillas and orang-utans so vivid to us. Although she was not sponsored by Louis Leakey, she did publish with *National Geographic*, and as this book shows, she worked with many legendary scientists and activists, including her supervisor G. Evelyn Hutchinson, Gerald and Lee Durrell, David Pilbeam, Jerome Bruner, Jean-Jacques Petter, Ian Tattersall, Russell Mittermeier, Tom Lovejoy, Sarah Hrdy, Patricia Wright, Hirai Hirohisa, Naoko Koyama, her one-time student Alison Richard—as well as outstanding Malagasy scientist pioneers including Berthe Rakotosamimanana, Joseph Andriamampianina, Joel Ratsirason, Barthélemy Vaohita, Gilbert Ravelojaona, Guy Ramanantsoa, Philibert Tsimamandro and her closest colleague Hanta Rasamimanana. She could also schmooze with the best when it came to the World Wildlife Fund or the World Bank, not to mention various ministers and presidents of Madagascar. But she did not take a full-time academic post, and she chose to study prosimians, rather than great apes, a more distant set of relatives to humankind. Less compelling to most of us perhaps, for Mum, lemurs beautifully illuminated the logic of evolutionary law. As she never tired of explaining, because Madagascar split from India eighty-eight million years ago, it became a distinct biosphere in which 90 percent of species are endemic, where lemurs filled all the niches that monkeys did elsewhere, and in an astonishing variety of shapes and sizes, from the dog-sized indri (which sings mournfully in tall trees) to the mouse lemur, the world's smallest mammal, to the otherworldly aye-aye, with its outsized skeletal third finger. Madagascar also hosts housecat-sized chameleons and tiny tenrec 'hedgehogs' which communicate through rubbing their striped quills together, comet orchids and the giant exploding palm tree.

David Attenborough's special interest in Madagascar has brought this wonder to the general public, though few realize that the island is nearly three times the size of Britain, and the home too of a blended Indonesian, African, and Arab culture that dates back well over a thousand years; a melodious undulating valiha harp music in *lova-tsofina* 12/16 rhythm, of mineral mining as well as vanilla and ylang ylang farming. Antananarivo, the capital, is filled with French-inspired ice-cream-colored houses alongside traditional red clay villas, its steep streets threaded with stepped lanes overhung with bougainvillea.⁵ The south boasts a warrior culture recorded first in print in the eighteenth-century bestseller *Madagascar, or Robert Drury's Journal during Fifteen Years' Captivity on That Island*, probably ghost-written by Daniel Defoe.⁶ Mum loved all this, and would invariably enjoy a few days in the capital at her favourite Hotel Colbert, catching up on the gossip, before beginning the bumpy ride to her research sites.

Despite her self-direction, my mother did not call herself a feminist, the subject of heated discussion with my sister and me for years, in which sociobiology became a line.⁷ Mum's world was full of females and males doing what they were programmed to do, mine full of radical bodies reshaping relationships, and we seemed poles apart. But as she opened up to my values, I came to see the scale of her achievements, and the subtlety of her argument that biology's force is interesting precisely because it is adaptive. Ironically too, I have come to see how strongly women-centred science was. Although her tastes were for outdoor adventure, dropping Jane Austen any day for Kipling, she saw her chosen method of watching animals *in situ* as deliberately non-invasive, letting the animals live and behave 'as they wanted to.'⁸ Linda Fedigan describes this as 'feminist science,' where nature is seen not as passive and subject to human control, but 'active, complex and holistic,' and in which too, the observer reflexively declares their own position.⁹ It was a deliberate contrast to the

laboratory-centred style of replicable experimentation in the late 1950s and early 1960s when Mum was trained. Photographs of her at Yale show her in this mould: long hair swept up in an attempt at her mother's preferred French twist, as she reaches an animal out of the cage. In fact, they never were specimens or subjects to her, and she would tell of the kinkajoo's jealousy of the lemur, until one day it escaped and ran up onto the lab window sill and was only coaxed down with a carrot. When clearing out her things, we came across four photo albums entirely of close-up portraits of ring-tails Berenty, all carefully labelled with their names. They had been used for team observation of troops. But the fact is, she knew who the individuals were, and she cared about them as part of her view that, as she wrote in an undergraduate essay on plankton, 'a community of living things has a structure even if the specific structures are too complex for him to understand. ... The student confines himself to the bounded region of a pond or log, but finds that everything affects it, from the path of a wandering newt to the climate of North America.'¹⁰

Despite contemporary suspicions of anthropomorphism, her approach anticipated a paradigm shift in theories of evolution. When she published her breakthrough *Science* paper in 1966, aged just 27, with me a baby on her knee, the dominant thought was that intelligence had evolved to master simple tools. She speculated that more likely it evolved through the challenge of maintaining complex social relationships.¹¹ As she put it in her best-selling textbook *The Evolution of Primate Behavior*, 'learning about the environment from within society and learning about society itself are thus the primate way of life.'¹² Mum certainly enjoyed using her children as subjects in this regard, and several of our 'behaviors' were analyzed as particular forms of learning, aggression, play or friendship. Looking again at this text, I see however her own behavior as a mother illuminated, following her belief that attachment is more important than food for a primate's development. Though she did pop off to Madagascar whenever she could, and always preferred an intellectual conversation to chit-chat, she refused the distant and controlled form of mothering common to her class in the 1930s and 1940s. Unsurprisingly, she couldn't always keep the balls in the air, especially when we moved to New York in 1982, and she needed to support my father's all-consuming work with the United Nations. Her diary of 1983 records her New Year's resolutions: 'To say I like New York, when asked. To be a great hostess. To be honest, when talking, particularly about life being romantic and reality melodrama. And a decade later, they included this reflection: 'I brought up the kids as I wanted to be—with freedom and excitement and little nagging about rules and appearance. Clearly this was wrong. But how wrong? Should I not have done what I did about career? Or tried to make NYC more of a home. Or what?' Her resolutions for 1992 included: 'Not to moan about the empty nest.'

Donna Haraway's interesting analysis of my mother's place in the history of primatology locates her achievements in the privileges of class and race, her heterosexually conventional marriage and dad's financial support, as well as the example of her own mother. Yet Haraway also describes how Mum's 'hybrid arrangement' depended on the 'craft production' that primatology still permitted in the 1960s and 1970s, in contrast to the more industrialized sciences, and that Mum's happiness with the arrangement was undoubtedly in part because of her strong self-esteem. She also pays tribute to my mother's growing self-awareness, her 'polyphonic' writing, responding to decolonization as well as gender politics by including the voices of Malagasy colleagues as well as those of the animals. My mother described travelling with the botanist Rachel Rabesandratana, both leaving their children to their husbands' care, discovering similar privileges as university-educated urban women juggling kids and career. Was camping deliciously romantic (Mum)? Or dangerous and uncomfortable (Rachel)? And what did the village grandmother serving them rice think? Haraway considered that my mother, had 'taken a modest, concrete part' in the development of a properly local and global

conservation about its many competing lives and peoples.¹⁴

So the question of mothering was not the biggest, important though it was. As proof that women do not go into primatology because they like ‘big brown eyes,’ my mother’s real interest was to discover ways that competitive species coexist and indeed cooperate.¹⁵ She proposed that ‘as we cannot reverse evolution, we have no choice but to continue using our knowledge to accept the responsibilities for our society.’¹⁶ In *Lucy’s Legacy*, which she wrote in her office at Princeton—where she had installed her mother’s green chaise longue—she argued that to learn where we go next, we need to understand and harness the evolution of sex and intelligence, cooperation and love.¹⁷ It is thus unsurprising that she moved from lemur observation to conservation. She worked with photographers, notably Fran Lanting,¹⁸ and television crews, but also listened to and interviewed local Antandroy people, the ‘lords’ of Southern Madagascar, as well as the de Heaulmes, the French–Malagasy family who own the Berenty Reserve and who had become firm friends. She did oral histories of guardians, native guides, plantation workers, villagers, fishermen, farmers, anthropologists, conservationists, ecotourists, aid workers, ministers and traders and developers.¹⁹ She lobbied. Most of all, she threw herself into training programmes with and for Malagasy biologists and teachers. Her last project was the *Ako* series (2005–12), illustrated children’s books of lemur adventures in the threatened forests which she wrote with her colleague Hanta Rasamimanana, doing what they could to integrate the into teacher training programmes.²⁰ She had been dreaming of this since 1964, after learning that Malagasy children only had pictures of European rabbits in their books, and the only available lemur photographs in the Malagasy Republic were on the covers of match books for tourists, too expensive for locals.²¹ Mum’s Malagasy students were far more important to her than any of her books.

Her broadening of interest was also driven by what was happening in Madagascar. It became officially independent in 1960, two years before she first visited, but French officialdom still dominated until 1972, when, amid popular unrest, army chief Gabriel Ramanantsoa seized power as head of a provisional government. The country’s ties with France were loosened in favour of the Soviet Union; French scientists were told to leave. The French government responded by taking everything with them, except a few cars and buildings.²² The new government then denied all research visas between 1975 and 1983. Mum continued to go in on tourist visas, beginning with a six-month visit in 1975 supported by the World Wildlife Fund to write *A World Like Our Own*.²³ This was the only time she took all the family with her; four children all aged under eleven, thrilled that we would live in the country’s zoo, in a whitewashed house next to Georges Randrianasolo, zoo director and an important catalyst for research. My father found some work with the government on poverty alleviation. But this was also the year that Didier Ratsiraka took power after a coup which set him up for a 22-year dictatorial rule. Mum’s instinctively literary rather than political sensibility was thus forced into focus by such visible nationalism, encouraged also by my father, with whom she had already begun to ask, who pays for conservation—and who benefits?

The book that follows begins with this question, with her arrival at the University of Antananarivo in 1985 conference on Environment and Sustainable Development. The Minister of Waters and Forests Joseph Randrianasolo, explains that this conference would not be like the previous one of 1970, which had emphasized the uniqueness, beauty, and scientific interest of Malagasy flora and fauna. In contrast, he puts it that the Malagasy want to manage their resources to be self-sufficient in food and fuelwood. Realizing that this was a turning-point, Mum began to keep frank and detailed diaries.²⁴ The arc starts in Part I, Villages, where she reveals the influences of the outside world on apparently timeless village life. In Part II, Politics, she goes behind the scenes of the development of a National Environmental Action Plan introducing protagonists Russell Mittermeier, Tom Lovejoy, and the

Napoleon-complexed Minister. The World Bank, USAID and other donors pledge funds, though not without acrimony. Then, with the funding established, Part III, Environment and Development, takes us into life at the National Park of Ranomafana in the eastern rainforest. Ranomafana's research and science are justly famous, as are its golden bamboo-lemurs. However, like all the other early international conservation and development projects, trying to bring development to unconvinced villagers is a fraught process. Part IV, Weather, moves south to the spiny forest—the name my mother coined—and her own research site Berenty, as well as the Beza Mahafaly reserve championed by Alison Richard. People and lemurs alike suffer in ferocious droughts. Evolution has shaped the lemurs and the culture the people to deal with such recurrent catastrophes. Climate change raises even greater challenges in the future.

My mother concludes that traditional life is in fact unsustainable. Change will come for good or bad. Thus in the final section, Money, her diaries track the prospect of mining concessions, as Madagascar's extraordinary natural mineral resources entice the interest of outside investors. Here we also see how Mum came to be controversially involved with Rio Tinto in the development of the QMM titanium mine on the country's southern coast, as an advisor on the independent Biodiversity Committee.²⁵ She talked to us about this as her chance to grasp the political opportunity—even as, by then, she was in her seventies and increasingly unwell. The Committee's achievement, in her view, was enormously due to the skill of fellow advisor Léon Rajaobelina, a former ambassador and Minister of Finance, was to negotiate the company's commitment to net positive improvement in both environment and society during the life of the mine and a pledge not to cause the extinction of any species—an astonishing ambition. It seems this has been achieved, but Mum knew that the story might end in tragedy. She died nine days after the election of a new president, Hery Rajaonarimampianina, on 26 January 2014, hoping not.

The reader will see that these are diaries of witness, not confession.²⁶ Even as she recorded the dinners and the dreams, what was most important to Mum was the ecology of community, not the private life. This was evident even in her last days, during which she was frantically writing the last pages on her deathbed, installed in her beloved study. Once, she woke to tell us she had been dreaming of indri lemurs singing in the trees by Cayuga Lake in Ithaca, though she knew this could not be possible. She left us a memorial service script in which she asked that we play a recording of the indri, followed by 'If I had a hammer, I'd hammer out justice' and a recessional of cheerful trumpet music. Later we heard from colleagues in Berenty that on the day of her death, the lemurs had come out of the forest, behaving oddly. Hanta said tartly this was 'Disney.' Mum would have too—she was adamantly against fantasies of an afterlife. She didn't need one. Reality was fantastical enough and evolution will take care of the rest.

I hope that readers will see this view as her legacy, and do what they can to continue to visit, live in love, and care for Berenty and Madagascar as a whole, as well as to marvel at its lemurs, whose fate depends upon us 'cruel but wonderfully amusing' humans. This was certainly her fervent hope, as she recorded her thoughts in these diaries through the tiny flash of a human lifetime.

Margaretta Jolly

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1. A. Jolly, *Lords and Lemurs: Mad Scientists, Kings with Spears, and the Survival of Diversity in Madagascar* (2004), pp. 30–31.
 2. M. Bishop, *A Bowl of Bishop: Museum Thoughts, and Other Verses* (1954), Preface.
 3. Both Alison's parents' papers are at the Cornell University Library as the Morris Bishop papers and the Alison Mason Kingsbury papers. Her mother's artistic career is analyzed in J. Piccirilli

The Art and Life of Alison Mason Kingsbury (2010).

4. Mum heard Jane give her first scientific paper at a special symposium on primates of the London Zoological Society in 1962 and was deeply impressed.
5. E.D. Ralaimihoatra, *Histoire de Madagascar* (1966); J.-L.V. Raharimanana and C. Ravoajanahary, *Madagascar* (1947).
6. Jolly, *Lords and Lemurs*, pp. 80–81.
7. A. Jolly and M. Jolly, ‘A view from the other end of the telescope’ (1990). See also A. Jolly, ‘Female biology and women biologists’ (1991), pp. 39–40.
8. *Alison Jolly: Seven Wonders of the World* (1995), dir. C. Sykes, BBC.
9. L.M. Fedigan, ‘Is primatology a feminist science?’ (1997), p. 67.
10. A. Jolly, term paper for Ithaca Habitats for Lamont Cole’s ecology course, 1956.
11. A. Jolly, ‘Lemur social behavior and primate intelligence’ (1966). See also S. Hrdy and P. Wright, ‘Alison Jolly: A supremely social intelligence (1937–2014)’ (2014).
12. A. Jolly, *The Evolution of Primate Behavior* (1972), p. 355.
13. D.J. Haraway, *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (1989), p. 272.
14. See also J. Scardina, *Wildlife Heroes: 40 Leading Conservationists and the Animals They are Committed to Saving*, Philadelphia, PA, Running Press 2012, and A. Labastille, ‘Eight women in the wild,’ *International Wildlife* 13, 1983 36–43.
15. On the ‘big brown eyes’ myth, see L.M. Fedigan, ‘Science and the successful female: why there are so many women primatologists,’ *American Anthropologist* 96, 1994 529–40.
16. Jolly, *The Evolution of Primate Behavior*, p. 357.
17. A. Jolly, *Lucy’s Legacy: Sex and Intelligence in Human Evolution* (1999).
18. F. Lanting, A. Jolly and J. Mack, *Madagascar: A World Out of Time* (1990).
19. Jolly, *Lords and Lemurs*.
20. M. Jolly, A. Jolly and H. Rasamimanana, ‘The story of a friendship,’ *Madagascar Conservation & Development* 5 (2010), pp. 125–6. See also A. Jolly, H. Rasamimanana and D. Ross, *Ny aiyako (Ako the Aye-Aye)*, Myakka City, FL, Lemur Conservation Foundation 2005. For more on the Ako Project, see www.lemureserve.org/akoproject2012.html.
21. My mother in this book pays tribute to her forerunner Barthélémy Vaohita, World Wildlife Fund Representative for Madagascar in the 1980s, whose primary school readers called *Ny Voara (Nature)*, were distributed to the provinces in 1987.
22. Jolly, *Lords and Lemurs*, pp. 182–3. Notably, the French–Malagasy de Heaulme family, who were farmers not scientists, but who own the Berenty Reserve, did not leave but committed themselves to working with the new government.
23. A. Jolly, *A World Like Our Own: Man and Nature in Madagascar* (1980).
24. The full diaries are available as part of the Alison Jolly Papers, Cornell University Library.
25. Bezanson, Keith et al., ‘Report of the International Advisory Panel on QMM’ (2012); R. Harbinson, ‘Development recast’ (2007).
26. Jolly, ‘The narrator’s stance’ (2011).

Chronology of events

160 million years ago: Madagascar separates from the African mainland.

80 million years ago: Madagascar breaks away from India.

2,000 years ago: Madagascar settled by people of Indonesian/African descent.

- 800 Arab merchants begin trading along the northern coast.
- 1200 Central highlands are settled.
- 1500 Portuguese captain Diogo Dias is first European to land on Madagascar, blown off-course on the way to India. He names the island St Lawrence.
- 1500s Portuguese, French, Dutch, and English attempt to establish trading settlements; they fail due to hostile conditions and fierce local Malagasy.
- 1880s France consolidates its hold over Madagascar in the face of local resistance.
- 1910s Growth of nationalism; discontent over French rule.
- 1927 Ten *Réserves naturelle intégrales* covering 160,580 ha created under French colonial order. Scientific entry permitted but local use prohibited.
- 1936 Forest reserves of Berenty Estate established by the de Heaulme family in consultation with Tandroy clans; sisal plantation founded beside the Mandrare river.
- 1937 *Alison Jolly born in Ithaca, New York.*
- 1946 Madagascar becomes an Overseas Territory of France.
- 1947 French suppress armed rebellion; thousands are killed.
- 1956 *Réserves spéciales* creates new protected areas.
- 1958 *Parcs nationaux* created.
- Madagascar votes for autonomy.
- Alison Jolly graduates with B.A. in Zoology from Cornell University.*
- 1960 Independence, with Philibert Tsiranana as Madagascar's first president.
- 1962 *Alison Jolly graduates with a Ph.D. in Zoology from Yale. First visits Madagascar for postdoctoral research on ring-tailed lemurs, New York Zoological Society.*
- 1963 *Alison marries English economist Richard Jolly.*

Four children born 1965, 1967, 1969, 1971.

- 1966 *Jolly publishes 'Lemur Behavior: A Madagascar Field Study.'*
- 1970 'Malagasy Nature, World Heritage' Conference, University of Antananarivo, which Jolly attends.
- 1971 *Jolly becomes research associate, University of Sussex.*
- 1972 *Jolly publishes 'The Evolution of Primate Behavior.'*
Popular unrest in Madagascar. Tsiranana dissolves government; General Gabriel Ramanantsoa becomes head of provisional government. He reduces the country's ties with France in favour of the USSR.
June: Madagascar participates in the United Nations Stockholm conference on the Environment.
- 1975 Lieutenant-Commander Didier Ratsiraka is named head of state after a coup, and elected president for a seven-year term. The country is renamed Democratic Republic of Madagascar.
Jolly takes the family to Madagascar for six months to research 'A World Like Our Own.'
- 1976 Ratsiraka forms the Arema Party. He nationalizes large parts of the economy, until 1986, when market economy promoted.
- 1980 *Jolly publishes 'A World Like Our Own.'*
First International Monetary Fund bailout.
- 1982 *Jolly family moves to New York as Richard becomes deputy director of UNICEF. Alison becomes guest investigator, Rockefeller University.*
Jolly travels in Madagascar with the BBC to work on 'Tropical Time Machine' for Horizon (1983).
- 1984 In Madagascar, *Stratégie Nationale pour la Conservation et le Développement Durable* (SNCD) adopted.
- 1985 International Conference on Conservation and Sustainable Development, Madagascar, attended by Prince Philip, Duke of Edinburgh, as president of WWF.
Jolly awarded Chevalier de l'Ordre National de Madagascar.
- 1987 *Jolly is visiting lecturer, Princeton University, 1987–2000.*
- 1989 Madagascar develops National Environmental Action Plan (NEAP).
- 1990 Paris: the world's first NEAP Accord signed for \$100 million, ratified as *Accord pour l'Environnement*. Beginning of a period integrating conservation and development projects.
- 1991 Ranomafana National Park formed. ANGAP (*Association Nationale pour la Gestion des Aires Protégées*) set up to manage Madagascar's protected areas system.
President Ratsiraka forced to give up powers after army opens fire on demonstration.

- 1992 *Plan d'Action Environnementale (PAE)*: Madagascar aims to develop a biodiversity offset policy for mining and logging companies along with other environmental incentives.
Constitution of the Republic of Madagascar is passed.
Article 39 states: 'Everyone shall have the duty to respect the environment; the State shall ensure its protection.'
Madagascar participates in the United Nations conference on the Environment, Rio de Janeiro.
Under pressure, Ratsiraka introduces democratic reforms.
Alison Jolly becomes president of the International Primatological Society.
- 1993 Albert Zafy elected president of Madagascar.
- 1994 Ministry of Environment established. MECIE law (*Mise en Compatibilité des Investissements avec l'Environnement*) set up to protect the environment during development.
- 1996 *Jolly becomes Honorary Chairman of the International Committee, 27th IPS Congress, Madagascar.*
GELOSE law approved, seeking to integrate rural people into forest management.
- 1997 Zafy impeached. Ratsiraka voted back into office.
- 1998 International Primatological Congress, University of Antananarivo.
Jolly awarded Officier de l'Ordre National de Madagascar.
- 1999 *Jolly joins independent advisory panel to QMM, Quebec Madagascar Minerals, a mining operation jointly owned by Rio Tinto and the Government of Madagascar.*
Jolly publishes 'Lucy's Legacy: Sex and Intelligence in Human Evolution.'
- 2000 *Richard and Alison Jolly return from New York to Lewes, Sussex.*
Jolly becomes Visiting Senior Research Fellow, University of Sussex, until her death.
Thousands homeless after two cyclones hit the island and Mozambique in March.
- 2001 May: Senate reopens after twenty-nine years, completing the government framework of presidency, national assembly, senate and constitutional high court provided for in the 1992 constitution.
December: First round of presidential elections. Opposition candidate Marc Ravalomanana claims an outright victory.
- 2002 January: Ravalomanana and his supporters mount a general strike and mass protests.
February: Ravalomanana declares himself president after weeks of political deadlock with Ratsiraka over the December polls. Violence breaks out.
April: constitutional high court declares Ravalomanana

winner of the December polls after a recount.

June: the USA recognizes Ravalomanana as president.

July: Ratsiraka seeks exile in France.

December: Ravalomanana's party, I Love Madagascar (TIM), wins a parliamentary majority.

2003 February: Former head of the armed forces is charged over an attempted coup against President Ravalomanana.

September: World Parks Congress in Durban. Ravalomanana unveils a plan to more than triple the country's total protected area, from 1.7 to 6 million ha, by 2008. The 'Durban Vision' sees the start of a period of mainstreaming environmental thinking into macroeconomic planning, lasting until 2008.

2004 February–March: Tropical cyclones Elita and Gafilo hit; thousands are left homeless.

October: World Bank, International Monetary Fund say they are writing off nearly half of Madagascar's debt.

Jolly publishes 'Lords and Lemurs: Mad Scientists, Kings with Spears, and the Survival of Diversity in Madagascar.'

2005 *Jolly with Hanta Rasamimanana publishes 'Ako the Aye-Aye.'*

Madagascar is the first state to receive development aid from the USA under a scheme to reward nations considered to be promoting democracy and market reforms.

With contributions from the Malagasy government, Conservation International and the WWF, the private Madagascar Biodiversity Fund is founded.

August: QMM mine project gets the go-ahead from Rio Tinto.

December: Malagasy Minister of Environment, Water, and Forests creates three new protected areas, bringing a further 875,000 hectares under protection.

2006 *Microcebus jollyae, Jolly's mouselemur, named by Edward Louis.*

January: Madagascar introduces a new park-management system, the *Système d'Aires Protégées de Madagascar* (SAPM), to replace ANGAP.

June: Conservation International Conference, Antananarivo. Ravalomanana commits to further protection of national parks.

December: Officials declare Ravalomanana winner of presidential elections.

2007 April: referendum endorses increase in presidential powers.

July: President Ravalomanana dissolves parliament after new constitution calls for end to autonomy of provinces.

September: Ravalomanana's TIM party wins 106 seats out of 127 in early parliamentary elections.

November: President Ravalomanana opens \$3.3 billion nickel cobalt mining project in Tamatave, said to be largest of its kind in the world.

Jolly acts as scientific advisor on 'Lemur Street' series.

2008 February–March: Cyclone Ivan kills 93 and leaves 332,391 homeless. UN launches \$36 million appeal for affected areas. March: Madagascar produces first barrels of crude oil in sixty years.

2009 January: Dozens killed in protests in the capital. Opposition leader Andry Rajoelina calls on the president to resign, and proclaims himself in charge of the country.

February: Dozens killed after police open fire on opposition demonstration in the capital.

March: Rajoelina assumes power with military and high court backing. Move is condemned internationally and isolates Madagascar.

June: Marc Ravalomanana, who has been living in exile, is tried and sentenced in absentia for abuse of office.

August: International mediators broker power-sharing agreement in Mozambique. Deal fails.

2010 March: African Union imposes targeted sanctions on Rajoelina and his administration.

May: Rajoelina sets a timetable for a constitutional referendum and elections.

June: EU decides to suspend development aid in the absence of democratic progress.

August: Marc Ravalomanana is sentenced in absentia to life in prison for ordering killings of opposition supporters.

November: Voters in referendum endorse new constitution that would allow Rajoelina to run for president.

2011 September: Eight political parties sign agreement to pave the way for elections to re-establish democracy. The deal leaves Rajoelina in charge of a transitional authority until March 2012 elections; it also allows for the return of the exiled Ravalomanana.

November: New unity government is unveiled. Opposition parties agree to join new government 'with reservations.' Former president Didier Ratsiraka returns after nine years in exile.

2012 *Jolly awarded honorary doctorate from the University of Antananarivo.*

May: Andry Rajoelina says he hopes elections can take place 'as soon as possible.'

June. Madagascar attends the United Nations Conference on Sustainable Development (UNCSD), also known as Rio+20

or Earth Summit 2012, aimed at reconciling economic and environmental goals of the global community.

September: Amnesty International calls on government to rein in security forces accused of killing dozens.

2013 January: Andry Rajoelina and Marc Ravalomanana agree not to contest elections, following SADC. When Ravalomanana's wife Lalao announces her candidacy, Rajoelina announces he will stand, as does Didier Ratsiraka. All declared invalid.

August: International Prosimian Congress, Ranomafana.

2014 January: Hery Rajaonarimampianina sworn in as president after elections.

February: Alison Jolly dies at home in Lewes.

Dramatis personae

ROLAND ALBIGNAC, French academic. Director of UNESCO's Man and the Biosphere Project. Key to achieving national park status for the Mananara Reserve.

JOSEPH ANDRIAMPIANINA, forest specialist. School of Agronomy, University of Antananarivo; head of the National Office of the Environment in the 1980s.

DAVID ATTENBOROUGH, BBC wildlife presenter, pioneering broadcaster and naturalist.

JOSEF BEDO, naturalist, guide and son of chief forester at Perinet.

DENNIS DEL CASTILLO, Peruvian agronomist and conservationist; head at the Amazon Research Institute.

DE HEAULMES, French–Malagasy owners of Berenty Reserve and sisal plantation. Three generations of the de Heaulme family have preserved the Berenty Reserve since 1936, and welcomed scientists since 1963.

FRANÇOIS FALLOUX, senior environmental advisor, Africa Region at the World Bank, and architect of the National Environmental Action Plan, Madagascar.

JÖRG GANZHORN, German ecologist and conservationist associated with Tsimamampetsotsa Reserve.

LISA GAYLORD, environment and development expert who has worked for USAID, World Conservation Society and Rio Tinto QMM.

JOLLY family: Alison's husband Richard and children Margaretta, Susan, Arthur (Morris) and Richard (Dickon).

FRANS LANTING, Dutch photographer, best known for his outstanding wildlife photographs in *National Geographic*.

TOM LOVEJOY, pioneer in the science and conservation of biological diversity; originator of the concept of debt-for-nature swaps. Formerly director of the World Wildlife Fund US program; American University Professor of Environmental Science and Policy.

BERNHARD MEIER, German biologist; co-discoverer of the golden bamboo lemur, Ranamanfana.

RUSSELL MITTERMEIER, American primatologist and herpetologist. President of Conservation International.

EMMA NAPPER, BBC Earth producer for *One Planet*, including *Madagascar* (2011).

TOSHISADA NISHIDA, Japanese primatologist. Head of Evolution Studies at Kyoto University in Japan; former president of the International Primatological Society.

JOE AND DAI PETERS, American conservation resource managers and consultants in conservation education and development. Worked at Ranomafana National Park.

JEAN-JACQUES AND ARLETTE PETTER, French primatologists who pioneered the study of lemurs.

LÉON RAJAOBELINA, Malagasy economist and conservationist. Formerly governor of the Central Bank; minister of finance during the elaboration of the NEAP, ambassador to the USA in the 1980s, and

vice president of Conservation International.

ÉMILE RAJERARSON, Malagasy researcher and guide at Ranamafana National Park; co-discoverer of the golden bamboo lemur with Bernhard Meier. An amphibian is named after him.

NY FANJA RAKOTOMALALA, Malagasy engineer. President of Rio Tinto QMM.

BERTHE RAKOTOSAMIMANANA, Malagasy primatologist.

PERMANENT Secretary of Higher Education, Secretary General of the Groupe d'Études et de Recherche sur les Primates de Madagascar (GERP) from its founding until her death in 2005.

JOHNY RABENANTOANDRO, Malagasy botanist. Environment manager of Missouri Botanical Gardens, later Rio Tinto QMM.

JEAN-BAPTISTE RAMANAMANJATO, Malagasy herpetologist; biodiversity and rehabilitation superintendant, Rio Tinto QMM.

GUY RAMANANTSOA, Malagasy zoologist and herpetologist. Chief engineer dealing with water resources and national parks (1970). Chair of the Water and Forestry Department in ESSA, the agronomy school of the University of Antananarivo.

GEORGES RANDRIANASOLO, Malagasy ornithologist. Director of the Parc Tsimbazaza, Antananarivo national zoo.

JOSEPH RANDRIANASOLO, Malagasy politician. Minister of Eaux et Forêts, 1980s.

LORET RASABO, chief guide at Ranamafana National Park.

HANTA RASAMIMANANA, Malagasy primatologist; close colleague and friend of Alison. Professor at the École Normale Supérieure, University of Antananarivo. Malagasy author and leader of the education component of the Ako Project with Alison Jolly.

JOELISOA RATSIRARSON, Malagasy ecologist. Professor at the Forestry Department of the School of Agronomy at the University of Antananarivo, and vice president of the University.

GILBERT RAVELOJAONA, associated with Bezà Mahafaly Reserve. President of ESSA, School of Agronomy, University of Antananarivo.

ALISON RICHARD, British primatologist; founder and lead scientist of Bezà Mahafaly Reserve. Vice-Chancellor emerita of Cambridge University; senior research scientist, Yale University.

ELEANOR STERLING, chief conservation scientist, Center for Biodiversity and Conservation, American Museum of Natural History.

PHILIBERT TSIMAMANDRO, anthropologist of the Tandroy people in the south of Madagascar.

PATRICIA WRIGHT, American primatologist, anthropologist, and conservationist best known for her study of social and family interactions of wild lemurs in Ranomafana National Park.

BARTHÉLÉMY VAOHITA, representative of the WWF in Madagascar in 1980s–90s; now président de l'Alliance française d'Antsiranana.

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