

Tribute to Martin Edwin Nicoll (1954-2020): Forty years (1980-2020) of a British scientist dedicated to the conservation of Malagasy biodiversity

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Martin Nicoll was born on 17 April 1954 in Devizes, Wiltshire, United Kingdom. His father was in the Royal Air Force (RAF) and his mother a housewife. Together with his two older sisters, they lived in RAF Compton Bassett, Wiltshire. Already at a young age, Nicoll showed an interest in nature and explored the small neighboring streams looking for all types of tiny creatures. From 1962 to 1964, Nicoll's family moved to Gibraltar where he scoured the seashore for crabs and shellfish. The family lived in Pitreavie, Fife, Scotland, from 1964 to 1966. Nicoll developed his interest in birds and small mammals, such as dormice and bats, and spent extensive time exploring the area. The family spent a year in Aden (currently in Yemen) between 1966 and 1967. Following the withdrawal of the British from Aden at the end of 1967, Nicoll's family moved to Ballykelly, Northern Ireland, where they stayed until 1968. The young Nicoll brought home and provided care for wild birds and small mammals before releasing them. Nicoll spent the next two years with his family in Cyprus where his attention as a naturalist focused on mouflon and seabirds. In 1970, the family returned to Rosyth, Scotland, and Nicoll finished High School in Kirkcaldy. He attended the University of Aberdeen and obtained a Bachelor of Science with honors in Zoology in 1976.

According to Paul Racey, Regius Professor Emeritus of Natural History at the University of Aberdeen and a world expert on bats, Nicoll was a keen observer and stood out among his peers for the originality of his mind. In the mid-1970s, he participated in an undergraduate expedition to the Seychelles, where his fascination for fruit bats and tenrecs led him to select the latter as the subject of his Ph.D. Nicoll undertook his doctoral studies under the supervision of Racey and was one of Racey's first Ph.D. students. Nicoll introduced his supervisor to the Seychelles and would later convince him to visit Madagascar. Nicoll secured the highly competitive

Leverhulme Overseas Studentship and a North Atlantic Treaty Organization (NATO) Studentship to work on Praslin Island, Seychelles, for three years from August 1977 to September 1980, studying the reproductive ecology of the Tailless Tenrec (*Tenrec ecaudatus*). This included radio-tracking individuals with implanted temperature transmitters. He also completed a major survey of the roosting sites of the endemic Sheath-tailed Bat (*Coleura seychellensis*) (Nicoll & Suttie, 1982) and the regional endemic Seychelles flying fox (*Pteropus seychellensis*) (Nicoll & Racey, 1981). After completing his field research and before returning to Scotland, Nicoll visited Madagascar for the first time in October 1980. He obtained his Ph.D. in Zoology from the University of Aberdeen (Nicoll, 1982).

On completion of his Ph.D., Nicoll was awarded a prestigious Harkness Fellowship to the U.S.A. He started a post-doctoral program at the National Zoological Park, Smithsonian Institution, in Washington, D.C., to work with Edwin Gould one of the pioneers of tenrec biology who worked together with John Eisenberg. From 1982 to 1985, he conducted field research in Madagascar on the reproductive energetics of the Malagasy Tenrecidae and on the niche partitioning among small mammals in tropical moist forests. His physiological studies of tenrecs led to a ground-breaking paper published in *Nature* on mammalian energetics (Thompson & Nicoll, 1986). His field study site was the Analamazaotra forest near Andasibe (Périnet). Based at the Hôtel de la Gare, which was the only hotel in Andasibe at that time, he was one of its very few clients. Monsieur Joseph, the hotel manager, assisted Nicoll with the logistics at a time when supplies were scarce on the island. During this period, Nicoll stayed with Alison Richard and Bob Dewar when he was in Antananarivo and he met in 1984 for the first time Patricia Wright. In 1985 Martin crossed paths with Alison Jolly and wildlife photographer Frans Lanting who were in Madagascar for a National Geographic Society assignment (Figure 1). The article published in 1987 featured Nicoll and his work on tenrecs and showed to the entire world the uniqueness of Madagascar's biodiversity, as well as threats to its survival (Jolly, 1987). In Antananarivo,



Figure 1. Martin Nicoll in September 2017 in Toliara holding a photo of him taken by Frans Lanting in Analamazaotra in 1985. (Photo by Frans Lanting.) ©Frans Lanting/Lanting.com

Nicoll worked with Felix Rakotondraparany, who from 1982 to 2003 was the curator of reptiles and small mammals at the Parc Botanique et Zoologique de Tsimbazaza, where Nicoll had installed an oxygen analyzer. It was at Tsimbazaza in 1985 that Nicoll met for the first time Peter James (PJ) Stephenson, who had just returned from surveying small mammals in Zahamena as part of a student expedition and to whom Nicoll suggested Racey as PJ's possible Ph.D. supervisor.

In April 1986, WWF International planned to establish a new conservation initiative in Madagascar, the Biodiversity and Protected Area Program. WWF selected Nicoll as the Principal Technical Advisor and Olivier Langrand as Technical Advisor for this unit. While awaiting the signed approval of the Malagasy authorities, which took more time than anticipated, WWF decided in May 1986 to send Nicoll and Langrand to Gabon to undertake an assessment of the conservation of the country's forest ecosystems, including a management plan for the Lope Reserve (Nicoll & Langrand, 1987). It was also a way for Jeff Sayer, their IUCN supervisor on behalf of WWF International, to test how well the pair worked together. The approval process by the Malagasy

authorities was further delayed as the paperwork for the establishment of the new WWF program and the formal appointment of both advisors was in the hands of Rear-Admiral Guy Sibon, Madagascar's Minister of Defense, who died in a plane crashed on 24 May 1986.

Nicoll and Langrand finally arrived in Antananarivo in September 1986. They established the office of the WWF Programme Biodiversité et Aires Protégées at the Direction des Eaux et Forêts (DEF) in Nanisana, Antananarivo, under the direction of Philémon Randrianarijaona. For two years, Nicoll and Langrand, together with Malagasy DEF staff including Jean-Prosper Abraham (a field botanist) and Joel Ratsirarson (a wildlife specialist trained at the Ecole de Faune de Garoua, Cameroon), visited all the established protected areas of Madagascar at that time and some classified forests. This two-year island-wide survey was concluded with the publication of a large-scale review of Malagasy biodiversity and was a critical turning point for the advancement of a national conservation strategy and action plan on the island (Nicoll & Langrand, 1989). Nicoll and Langrand worked closely with the World Bank in the context of the first Environmental Action Plan that led to the creation in 1990 of the Association Nationale pour la Gestion des Aires Protégées (ANGAP), which would become Madagascar National Parks in 2008 (Langrand *et al.*, 1988). Nicoll led the WWF "Programme Biodiversité et Aires Protégées" until 1992 and during his tenure management plans for the protected areas of Ankarana, Montagne d'Ambre, Marojejy, and a strategic document for Andohahela were prepared under his supervision.

In parallel to his responsibilities at WWF, Nicoll held between 1988 and 1992 an honorary position as Senior Research Associate at the University of Aberdeen, under which he became the assistant Ph.D. supervisor of Stephenson who studied tenrecs in the country from 1988 to 1990. Stephenson built on Nicoll's early work on tenrec physiology and ecology, even using the same study site, Analamazaotra, for much of his field work. Nicoll helped ensure that the two students who acted as field assistants for Stephenson's tenrec work (Nasolo Rakotoarison and Herilala Randriamahazo) were also able to benefit from training offered by Professor Racey's research lab in Aberdeen.

Nicoll also promoted the participation and training of Malagasy students in field biodiversity work, leading to the creation in 1991, at his initiative, of WWF's Ecology Training Program. Nicoll

selected promising students for training overseas, including Felix Rakotondraparany, Randriamahazo, Rakotoarison, and Jeannot Randrianasy who all went to the United Kingdom for six months for training at the Jersey Zoo and at the University of Aberdeen, funded by the British Council. Rakotondraparany, small mammal specialist, is now professor and researcher in the Mention Zoologie et Biodiversité Animale, Université d'Antananarivo. Randriamahazo, herpetologist, obtained his Ph.D. at the University of Kyoto, Japan. After several years as coordinator of Turtle Survival Alliance in Madagascar he is now the marine program director at Wildlife Conservation Society in Madagascar. Jeannot Randrianasy, paleontologist, obtained his Ph.D. from the Université d'Antananarivo and is a professor and researcher in the Département de Paléontologie et d'Anthropologie Biologique at the same university. Rakotoarison (1961-1996), primatologist, obtained a master's degree in 1992 and worked as curator of small mammals at the Parc Botanique et Zoologique de Tsimbazaza. Subsequently he started his Ph.D. on nocturnal lemurs, but died in a tragic car accident. In 1992, the WWF Ecology Training program was placed under the technical supervision of Steven M. Goodman of the Field Museum of Natural History, Chicago. Over the subsequent 16 years, this program not only documented the biodiversity of 400 sites, including protected areas and zones of biological interest, but also trained 250 students during annual field schools and helped 75 Malagasy students obtain their graduate degrees.

Due to Nicoll's work making him one of the pioneers of research on tenrecs, from 1986 to 1994, he was appointed as the Chairman of the IUCN Species Survival Commission, Insectivore, Tree-shrew, and Elephant-shrew Specialist Group. He produced with Galen Rathbun the first conservation action plan for tenrecs (Nicoll & Rathbun, 1990) and, based on a long-term interest in these animals, three decades later co-authored an update on the status and conservation priorities of these mammals (Stephenson *et al.*, 2019).

In 1992, Nicoll left Madagascar for Nairobi, Kenya, to work as senior conservation advisor for the WWF Africa continent-wide program on strategy development and project design, support, and evaluation. In 1997, Nicoll returned to Madagascar as a technical assistant for WWF, based in Antananarivo, to provide support for the national park network. He reconnected with former DEF staff member Rakotonindrina who had been appointed director of

ANGAP. For six years, Nicoll provided support to the newly created inter-regional direction and individual protected areas under the authority of ANGAP and offered his expertise on conservation management and national system planning.

In 2004, Nicoll became Senior Conservation Advisor for the WWF Madagascar and Western Indian Ocean Program Office. This position included different responsibilities, including support to the Madagascar protected area system with respect to developing management plans, assessing management effectiveness, conducting ecological monitoring, implementing the work program on protected areas of the United Nations Convention on Biological Diversity, supporting the Madagascar Foundation for Protected Areas and Biodiversity, and developing World Heritage Sites in collaboration with UNESCO. Nicoll was involved in the implementation of the "Durban Vision" that had been formulated to operationalize the declaration made in 2003 by the former President Ravalomanana to triple the surface of the protected areas of Madagascar (Gardner *et al.*, 2018; Langrand & Rene de Roland, 2018).

Between 1990 and 2008, Nicoll was one of the linchpins of the USAID funded programs MIRAY (1998-2004) and MIARO (2004-2009) implemented as a contribution to the second and third phase of the National Environmental Action Plan (Freudenberger, 2010). From 2003 onward, Nicoll was also at the center of the Vision Durban process which tripled the area of protected areas in Madagascar (Virah-Sawmy *et al.*, 2014). He initiated and facilitated the negotiations to resolve the issue of the overlap between the mining concessions and new protected areas. He led the development of management tools for the new protected areas and actively participated in the implementation of Système des Aires Protégées de Madagascar (SAPM). Nicoll demonstrated a strong commitment to protected areas and promoted dialogue between sectors as the representative of non-governmental organizations in the Extractive Industry Transparency Initiative (EITI) during the early years of Madagascar's participation in this initiative.

Nicoll was a passionate and knowledgeable scientist and conservationist with an excellent knowledge of Madagascar's protected areas and biodiversity. He inspired, advised, and mentored many individuals who have dedicated their careers to documenting and conserving the island's biodiversity (Figure 2). Even though of a sociable nature, he remained during his entire life a very private person. Nicoll died in Toliara on 1 January 2020, where he is buried.



Figure 2. Martin Nicoll with Bernhard Meier, a German primatologist (and Lucienne Wilmé and Loret Rasabo in the background) in a field camp at Ranomafana in 1988. (Photo by O. Langrand.)

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References

- Freudenberger, K. 2010. *Paradise lost? Lessons from 25 years of USAID environment programs in Madagascar*. International Resources Group, Washington, D.C.
- Gardner, C. J., Nicoll, M. E., Birkinshaw, C., Harris, A., Lewis, R. E., Rakotomalala, D. & Ratsifandrihamanana, A. N. 2018. The rapid expansion of Madagascar's protected area system. *Biological Conservation*, 220: 29-36.
- Jolly, A. 1987. Madagascar: A world apart. *National Geographic*, 171: 148-183.
- Langrand, O. & Rene de Roland, L. A. 2018. Histoire des aires protégées de Madagascar / History of Madagascar protected areas. In *Les aires protégées terrestres de Madagascar: Leur histoire, description et biote / The terrestrial protected areas of Madagascar: Their history, description, and biota*, eds. S. M. Goodman, M. J. Raherilalao & S. Wohlhauser, pp. 79-104. Association Vahatra, Antananarivo.
- Langrand, O., Nicoll, M. E. & Post, I. 1988. Synthèse sur le maintien de la biodiversité. In *Madagascar Plan d'Action Environnemental Volume 2, Synthèses spécifiques et recommandations*. Banque Mondiale, Washington, D. C.
- Nicoll, M. E. 1982. Reproductive ecology of the tenrec, *Tenrec ecaudatus* (Insectivora: Tenrecidae) in the Seychelles. Ph.D. thesis, University of Aberdeen, Aberdeen.
- Nicoll, M. E. & Langrand, O. 1987. Conservation et utilisation rationnelle des écosystèmes forestiers du Gabon. WWF/IUCN, Gland.
- Nicoll, M. E. & Langrand, O. 1989. *Revue des aires protégées et de la conservation des écosystèmes à Madagascar*. WWF, Gland.
- Nicoll, M. E. & Rathbun, G. B. 1990. *African Insectivora and elephant-shrews. An action plan for their conservation*. IUCN, Gland.
- Nicoll, M. E. & Racey, P. A. 1981. The Seychelles fruit bat *Pteropus seychellensis seychellensis*. *African Journal of Ecology*, 19: 361-364.
- Nicoll, M. E. & Suttie, J. M. 1982. The sheath-tailed bat *Coleura seychellensis* (Chiroptera: Emballonuridae) in the Seychelles Islands. *Journal of Zoology*, 197 (3): 421-426.
- Stephenson, P. J., Soarimalala, V., Goodman, S. M., Nicoll, M. E., Andrianjakarivelo, V., Everson,

- K. M., Hoffmann, M., Jenkins, P., Olson, L. E., Raheriarisena, M., Rakotondraparany, F., Rakotondravony, D., Randrianjafy, V., Ratsifandrihamanana, N. & Taylor, A. 2019. Review of the status and conservation of tenrecs (Mammalia: Afrotheria: Tenrecidae). *Oryx*, 1-10 doi.org/10.1017/S0030605318001205.
- Thompson, S. D. & Nicoll, M. E . 1986. Basal metabolic rate and energetics of reproduction in therian mammals. *Nature*, 321 (6071): 690-693.
- Virah-Sawmy, M., Gardner, C. & Ratsifandrihamanana, A. 2014. The Durban Vision in practice: Experiences in participatory governance of Madagascar's new protected areas. In *Conservation and environmental management in Madagascar*, ed. I. R. Scales, pp. 216-252. Routledge, London.