Association International Vahatra

Annual report for 2011

Prepared by

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CONTENTS

It is with considerable pleasure that we present to you our annual report for 2011. It is rather extraordinary how quickly time passes and that the Association Vahatra has just completed its fourth year of work. A lot has happened over the course of the past four years and withstanding the social-economic-political problems that have affected the country since 2009, Vahatra has been able to make very important advances with helping in the education and capacity building of young Malagasy scientists, as well as exploring aspects of the island's remarkable biological diversity. Vahatra now has a website (www.vahatra.mg) that we cordially invite you to explore. As you will discover in this annual report, the association has expanded a number of activities in different fields of biology and conservation, and has commenced its own publishing house. If you have any comments or questions, please do not hesitate to be in contact (associatvahatra@moov.mg). In the behalf of Vahatra, best wishes to you and your family for 2012.

A MESSAGE FROM THE PRESIDENT OF VAHATRA, ACHILLE P. RASELIMANANA, DR., HDR

The ultimate objective of the Association Vahatra is to contribute in an active manner to the long-term management and conservation of the rich and unique biodiversity of Madagascar. In order to reach this goal and vision, the association focuses on three different aspects: 1) amelioration of knowledge of the island's natural patrimony, 2) the dissemination of scientific information, and 3) capacity building for young national biologists to become reliable and operational human resources for the future. The association is also convinced that in order to realize these aspects, a major effort is required from many different research and educational facets. In order to have major advances to reach these goals, it is needed to expand the range of activities, which in turn will insure excellent partner development and produce coherent and synergetic collaborations.

During the course of 2011, three different directions have been employed to advance towards this new vision. First, is the diffusion of information to the Malagasy public, which allows them to be more aware of the island's biodiversity and aspects of its natural history. This was achieved or advanced by three different projects: a guide series on Madagascar animals, the first three volumes covering bats, small mammals, and the endemic birds of Madagascar; a forthcoming "Atlas to the biodiversity of Madagascar"; and a project entitled "Science for the people". The principal objectives of these different projects, which are presented in detail within this annual report, are to provide information to a wide range of individuals, as well as promoting collaborations between national, regional and international specialists for the exchange of experiences, ideas, and competence. As you will uncover, Vahatra has advanced collaborations at these three different scales for advancing biodiversity studies, to disseminate information, and reinforce exchanges.

One of the important goals is to provide the means for Malagasy graduate students to navigate through and pass a number of potential barriers in their scientific development. To achieve this we have used three different strategies: 1) active participation of students working with Vahatra in activities related to biodiversity and the environment, such as the topic of climate change or participation in field schools; 2) furnish grants to students to develop critical language skills, in almost all cases the "English Training Program" associated with the US Embassy; and 3) to encourage their active involvement in research and as biodiversity specialists associated with research programs, including publishing results, and attending national and international conferences and other training courses, often making formal oral presentations.

During the upcoming year, the Association Vahatra will pass through a decisive phase, with respect to evaluation and a retrospective analysis of the intended impacts of its projects, as well as aspects that need to be corrected in its approach. Many things have been accomplished, many things remain to be done, so good luck to all for further advancements!

LONG-TERM GOALS

The long-term goals of the Association Vahatra are to advance Malagasy scientists, specifically graduate students within the national university system, and make important advances in understanding of the island's unique biota. Our profound intent is to create an organization with a long-term future, both in the sense of a vision and financial base. A critical aspect to mention is that we have created this vision largely based on the scientists and students incorporated into the association, and, hence, profoundly Malagasy in prospective. This is in comparison, for example, of a large international organization that might not necessarily have the interests of Madagascar as its point of perspective. This aspect is fundamental for the long-term vitality of the association, since members are engaged and committed by conviction with regard to the study, management and conservation of their natural heritage.

The seed was planted for Association Vahatra about 20 years ago in the context of a project organized by WWF-Madagascar and known as The Ecology Training Program. Steve Goodman and Achille Raselimanana were the coordinators of the project for many years, during which several generations of Malagasy students finished their higher degrees within the Malagasy university system in Zoology and Conservation Biology. Some of these graduates formed the founding and permanent scientific members of Vahatra and are amongst the major actors in the modern community of Malagasy biologists. These individuals are now responsible for the advancement of new generations of national field biologists in two manners, which are closely aligned – 1) lecturers and professors within the national university system and 2) active scientific members of the Vahatra staff.

VAHATRA – PERMANENT STAFF

1. Dr. Achille P. Raselimanana – President of Vahatra and Professor, Department of Animal Biology, The University of Antananarivo. Founding member. Achille was one of the first generation of ETP graduates and did his DEA and Ph.D. in the context of this program. He has recently presented his "Habilitation à Diriger des Recherches" (HDR) at The University of La Réunion. Achille is a herpetologist with considerable field experience and also in classical and molecular systematics. He worked as the Biodiversity Program Officer for WWF-Madagascar for almost ten years before the creation of Vahatra.
2. Madame Malalarisoa Razafimpahanana – General Secretary of Vahatra. Founding member. She is responsible for the administration of the association, as well as technical aspects of type setting of *Malagasy Nature* and the different books published by the association. She is also the association webmaster.
3. Dr. Marie Jeanne Raherilalao – Editor, *Malagasy Nature* at Vahatra and Professor , Department of Animal Biology, The University of Antananarivo. Founding member. Marie Jeanne did her Ph.D. associated with the ETP. Marie Jeanne is an ornithologist.
4. Dr. Voahangy Soarimalala – Scientific Coordinator at Vahatra and Head Curator, Department of Animal Biology, The University of Antananarivo. Professor, The University of Fianarantsoa. Founding member. Voahangy did her DEA and Ph.D. associated with the ETP. Voahangy is a mammalogist.
5. Dr. Steven M. Goodman – Scientific Advisor at Vahatra and Lecturer, Department of Animal Biology, The University of Antananarivo and The University of Mahajanga. Founding member. Steve works with both mammals and birds and holds the post of MacArthur Field Biologist, Field Museum of Natural History, Chicago.
6. Mr. Rachel Razafindravao called "Ledada" – logistic coordinator. Ledada started working with the ETP some 18 years ago and transferred to Vahatra in October 2007. He has helped organize logistics for well over 220 field missions to some of the remotest areas on Madagascar.

7. Madame Françoise Ramalalatiana – domestic help. Françoise has worked with Vahatra since October 2007.

8-10. Mara Avy, Elisa, and Rivo – guardians. The first two men started working with Vahatra in October 2007 and the third about two years latter.

VAHATRA'S BOARD OF DIRECTORS

In order to provide needed guidance and counseling for the current and future programs associated of Vahatra, a Board of Directors was named, which includes the following individuals:

Malagasy nationals

Dr. Daniel Rakotondravony – Chef de Laboratoire des populations animales terrestres, and Professor at the Département de Biologie Animale, Université d'Antananarivo.

Nanie Ratsifandrihamanana – Director of Conservation, WWF, Madagascar.

General Guy Ratrimoarivony – Général de Corps d'Armée, Director of Strategy Seminar, Center for Diplomatic and Strategic Studies.

Chantal Andrianarivo – Head of Research and Biodiversity, National Association for the Management of Protected areas (ANGAP), now called Madagascar National Parks.

Dr., HDR Joelisoa Ratsirarison – Professor at the University of Antananarivo.

Jean Chrysostome Rakotoary – General Director of the National Office for the Environment (ONE).

Professor Raoelina Andriambololona – Professor at the University of Antananarivo, General Director of ISTN (Antananarivo Higher Institute of Technology) and Member of the Malagasy Academy.

Foreign members

John McCarter – President of the Field Museum.

Michael Polsky – President, Invenergy.

Olivier Langrand – Director of Global Affairs, Island Conservation.

Jörg U. Ganzhorn – Professor at the University of Hamburg.

The 2011 annual meeting of the Board of Directors will be held in late February 2012. There has been a slight delay associated with the coordination of a date that fits the program of the different members.

STUDENTS

We are currently working directly with different Malagasy students registered within the national university system and conducting their "Diplôme d'Etudes Approfondies" or DEA (roughly equivalent to a MSc.), Professional licences (DESS), and Ph.Ds degrees (see section below entitled "Active graduate students and presentations made during 2011"). Further, the scientific members of Vahatra are also in contact with tens of other Malagasy students as secondary advisors and members of thesis and memoir committees. We have made a dedicated effort to work with undergraduate and graduate students in other provincial universities outside of Antananarivo, including Toliara, Fianarantsoa, and Mahajanga. In addition, Vahatra staff members advise many other Malagasy students with aspects of their research, access to literature, and other forms of advice. For example, since Vahatra open its doors in late 2007, over 240 different students not registered with the program have come to the office to use the library facilities or consult with the scientific staff. (These figures are based on a sign-in notebook we maintain.) Steven M. Goodman also serves on the Ph.D. committees of students at The University of Kwa-Zulu Natal, where he is Honorary Professor, at The University of Geneva (Switzerland), University of Paris, University of La Réunion, and The University of Rennes; most of the research themes of these different Ph.D. projects are associated with Malagasy animals.

The graduates from the Vahatra program have found permanent jobs within numerous portions of the governmental and non-governmental sectors of Malagasy working society. Significant portions of the students passing through the program obtain jobs that are associated with biology and conservation, for example, from university appointments, working in the Ministry of Environment, working within NGOs, associated with the Madagascar National Parks program, etc. Hence, one of the initial mandates of the association, to advance science and conservation in Madagascar with focused mentorship of graduate students, is working. A good example of this is the number of university appointments Vahatra graduates have received in the past few years (Table), which provides the means to increase greatly the impacts of the program for goals of studying the island's unique biota and conserving it.

Table. Malagasy graduate students that worked with Vahatra and recently obtained posts in the national university system. Most retain a sort of adjunct status at the Association Vahatra or continue research programs with Vahatra scientific members.

1. Zafimahery RAKOTOMALALA – Thesis title: Distribution des communautés des micro-mammifères dans l'Ouest de Madagascar: Détermination de l'implication des traits hydrographiques naturels dans les assemblages zoologiques – This thesis was presented in March 2010. Zafimahery has subsequently obtained the post of Professor in the Department of Animal Biology, The University of Antananarivo.
2. Harimalala Fanja RATRIMOMANARIVO – Thesis title: Inventaire des espèces de chauves-souris synanthropiques malgaches et étude de la variation morphologique, phylogéographique des quatre espèces de Molossidae dans des îles occidentales de l'Océan Indien et de l'Afrique – This thesis was presented in April 2010. The student was engaged in an 18-month post-doc associated with Vahatra. Before the termination of her post-doc, she was named as Professor at The University of Toliara.
3. Claudette Patricia MAMINIRINA – Thesis title: Etude systématique et phylogénétique de *Miniopterus* Bonaparte 1837 (Microchiroptera : Vespertilionidae) de Madagascar – This thesis was presented in April 2010. The student is currently engaged in an 18-month post-doc associated with Vahatra and has published a series of papers associated with her research. She has recently been named as a Lecturer at The University of Antananarivo.
4. Martin RAHERIASENA -- Thesis title: Les petits-mammifères non-volants (Afrosoricida, Soricomorpha et Rodentia) dans le complexe forestier de la région de Loky-Manambato: biodiversité, biogéographie et effets de fragmentation forestière – This thesis was presented in March 2010. Martin has subsequently obtained the post of Lecturer in the Department of Animal Biology, The University of Antananarivo. The student has published a few papers associated with the thesis topic.

Active graduate students working in different manners with Association Vahatra and presentations made during 2011

A- DEA, Ph.D. and HDR diplomas presented by students or members of Association Vahatra

Ingady, M. 2011. Etude de la structure de la population et analyse de la préférence en habitat d'*Uroplatus giganteus* Glaw, Kosuch, Henkel, Sound & Böhne, 2006 dans le Complexe de la Montagne d'Ambre. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Rakotondramanana, C. F. 2011. Etudes bio-ecologiques et morphologique des chauves-souris de Kirindy CNFEREF, Morondava. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Randriamaherijaona, S. 2011. Etude du peuplement des ectoparasites des micromammifères Tenrecidae dans la forêt de Maromiza, Madagascar. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Randriamoria, T. M. 2011. Etude comparative des communautés de l'herpétofauné des deux blocs forestiers de Beanka dans la région de Melaky. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Raselimanana, A. P. 2011. Développement et renforcement des capacités vers la conservation et gestion de la biodiversité malgache. Mémoire d'Habilitation à

diriger des Recherches, Faculté des Sciences et technologies, Université de La Réunion.

Zafindranoro, H. H. 2011. Etude comparative des communautés des faunes micromammifères des deux blocs forestiers de Beanka dans la région de Melaky. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

B- Professional license, DEA, Ph.D. and HDR diplomas defended with implication of Vahatra scientific members as a supervisor, member of lecture committee or member of jury

Andrianaivoarivelo, A. R. 2012. Ecologie et population de *Rousettus madagascariensis* G. Grandidier, 1928 (Pteropodidae). Université de Rennes.

Andrianarimisa, A. 2011. Communauté aviaire et écologie du paysage au service de la conservation. Mémoire d'Habilitation à diriger des Recherches, Faculté des Sciences, Université d'Antananarivo.

Andriatsoanarina, B. 2011. Contribution au zonage de la zone périphérique du Parc National de Tsimanampetsotsa, à travers d'une gestion communautaire comme le cas du COBA « Tsimandika Lilindraza, Région Atsimo Andrefana. Mémoire de Licence Professionnelle en Environnement, Institut des Sciences et Techniques de l'Environnement, Université de Fianarantsoa.

Faliarisoa, E. 2011. Etude phénologique d'*Anodonthyla montana* et de *Mantidactylus madecassus*, amphibiens endémiques du haut massif d'Andringitra. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Kafa, A. 2011. Contribution sur l'inventaire des Mangroves d'Ambondrolava, Toliara. Mémoire de Licence Professionnelle en Environnement, Institut des Sciences et Techniques de l'Environnement, Université de Fianarantsoa.

Nesi, N. 2012. Systématique et phylogéographie des chauves-souris africaines de la sous-famille des Epomophorinae (Chiroptera, Pteropodidae). Docteur du Muséum d'Histoire naturelle, Paris.

Raharisoa, A. C. 2011. Etude bio-écologique d'un poisson cichlidae endémique : *Katria katria* (Melanie L.J. Stiassny & John S. Sparks, 2006) de la rivière Nosivolo à Marolambo, Région Atsinanana-Madagascar. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Rakotoarimihaja, T. 2011. Analyses des relations trophiques entre les insectes et les baobabs malgaches. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Rakotoarivelo, F. In preparation. Biogéographie, évolution et systématique du genre *Jumellea* Schltr. (Angraecinae, Orchidaceae) dans le « Hot-Spot. Faculté des Sciences et des Technologies, Unité Mixte de Recherche, Peuplements Végétaux et Bioagresseurs en Mileu Tropical, Université de La Réunion.

Rakotoniaina, H. J. 2011. Evaluation de la tendance dynamique de la population de *Cheirogaleus medius* et de sa préférence d'habitat dépendante de la densité au niveau de la concession forestière de Kirindy CNFEREF. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Ramilison, M. 2011. Contribution à l'étude de comportement alimentaire des 3 espèces de lémuriens : *Eulemur coronatus* (Gray, 1842) ; *Lemur catta* (Linnaeus, 1758) ; *Varecia rubra* (Geoffroy, 1813) dans le Parc Botanique et Zoologique de Tsimbazaza. Mémoire de Licence Professionnelle en Environnement, Institut des Sciences et Techniques de l'Environnement, Université de Fianarantsoa.

Ranivoarivelo, S. 2011. Etudes des effets anthropiques sur la population des tortues radiées (*Astrochelys radiata*, Gray, 1873) dans le PN de Tsimanampetsotsa. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

The Seing, S. 2011. Etude bio-écologique et structural de la population de fuligule de Madagascar, *Aythya innotata* (Salvadori, 1894) dans le Complexe lacustre de Bemanevika à Bealanana. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Tsibara, M. 2011. Bio-écologie de *Triaenops furculus* (Hipposideridae) et d'*Otomops madagascariensis* (Molossidae) dans la région de Saint Augustin et dans le Parc National Tsingy de Bemaraha. Thèse de Doctorat de Troisième Cycle, Département de Biologie, Université Toliara.

Volazara, A. 2011. Etude de faisabilité du transfert de gestion des ressources naturelles : Cas de la raphière de la Station Forestière d'Antrema. Diplôme d'Etude Supérieure Spécialisée, Département de Biologie Animale, Université d'Antananarivo.

C- Masters and Ph.D. thesis at the beginning or at the final stage of preparation in direct collaboration with scientific members of the Associated Vahatra

Andriafidison, D. In preparation. Ecologie et conservation des gites dortoirs de *Pteropus rufus* (Pteropodidae) dans les différents écosystèmes de Madagascar. Thèse de Doctorat de Troisième Cycle, Département de Biologie Animale, Université d'Antananarivo.

Andrianaivo, B. T. D. In preparation. Micromammifères du Haut Plateau et les maladies émergentes. Thèse de Doctorat de Troisième Cycle, Département de Biologie Animale, Université d'Antananarivo.

Andrianaivo, B. T. D. In preparation. Etude de préférence écologique de *Microcebus murinus* (Miller, 1777) dans le complexe forêt d'Ambatotsirongorongo, zone degradée et la forêt littorale de Petriky, Tolagnaro, Région Anosy (Tloiara). Mémoire de DEA. Département de Biologie Animale, Université d'Antananarivo.

Kofoky, A. In preparation. Ecologie des chauves-souris d'Andranomanintsy, Besalampy. Thèse de Doctorat de Troisième Cycle, Département de Biologie Animale, Université de Toliara.

Rabearisoa, P. A. In preparation. Contribution à l'étude du régime alimentaire des *Couas* arboricoles de Madagascar. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Rakotonandrasana, R. E. N. In preparation. Etude de l'effet du changement climatique sur la distribution des espèces de reptiles et d'amphibiens dans les parcs nationaux d'Andringitra, d'Andohahela et de Montagne d'Ambre. Thèse de Doctorat de Troisième Cycle, Département de Biologie Animale, Université d'Antananarivo.

Rakotozafy, L. M. S. In preparation. Etude de la communauté des amphibiens pandanicoles dans la forêt humide de Maromiza, Moramanga. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Ramanana, T. L. In preparation. Evaluation des effets des changements climatiques sur la diversité et la distribution des petits mammifères non volants (Rodentia, Afrosoricida et Soricomorpha) suivant les transects altitudinaux dans les massifs montagnards de la Montagne d'Ambre, d'Andringitra, et d'Andohahela. Thèse de Doctorat de Troisième Cycle, Département de Biologie Animale, Université d'Antananarivo.

Ramasinatrehina, N. S. In preparation. Etude de la population d'une espèce de râle, *Mentocrex beankaensis* dans la forêt sèche de Beanka, Maintirano. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Ramasindrazana, B. In preparation. Etude morphologique, taxinomique et bioacoustique des chauves-souris insectivores de Madagascar : cas de bioécologie des Miniopteridae et des Hipposideridae. Thèse de Doctorat de Troisième Cycle, Département de Biologie Animale, Université d'Antananarivo.

Randriamoria, T. M. In preparation. Etude comparative de la performance écologique de cinq espèces de caméléons malgaches (*Furcifer antimena, F. labordi*, *F. nicosiai*, *F. oustaleti* et *F. verrucossus*) : Régime alimentaire et adaptation éco-biologique. Thèse de Doctorat de Troisième Cycle, Département de Biologie Animale, Université d'Antananarivo.

Randrianantoandro, N. C. A. In preparation. Etude de la population du gecko géant *Uroplatus giganteus* dans la forêt sèche de Beanka, Madagascar. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Randriandimbimahazo, R. In preparation. Etude d'impact de l'utilisation des herbicides sur les vertébrés terrestres dans l'ecotone savane-foret sèche à Beanka, Maintirano. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Rakotomalala, H. E. In preparation. Etude de la communaute d'Anatidae sauvages du lac Alaotra à Madagascar et risques épidémiologiques associés. Mémoire de diplôme d'études approfondies, Département de Biologie Animale, Université d'Antananarivo.

Rasoma Rahantavololona, V. J. In preparation. Relation entre *Astrochelys radiata* (Testudinidae) et la végétation au Parc National de Tsimanampetsotsa. Thèse de Doctorat de Troisième Cycle, Département de Biologie Animale, Université d'Antananarivo.

Sama, Z. In preparation. Biologie de conservation d'une espèce menacée d'échassier endémique: Le Gravelot de Madagascar *Charadrius thoracicus* **(**Richmond, 1896). Thèse de Doctorat de Troisième Cycle, Département de Biologie Animale, Université d'Antananarivo.

D- Presentations made during 2011 by Vahatra scientific members

Goodman, S. M. An overview of the biota and research developments on Madagascar. Presentation made in Antananarivo to group visiting from The Australian National Museum.

Goodman, S. M. The importance of molecular systematics in advancing measures of biodiversity and its implications for conservation on Madagascar. Invited plenary lecture at Annual Meeting of South African Society of Systematic biologists, Grahamstown, South Africa.

Goodman, S. M. An overview of the biota and research developments on Madagascar. Presentation to recently arrived Peace Corps volunteers, Mantasoa.

Goodman, S. M. Une revue des mammifères endémiques et introduits des îles du Sud-ouest de l'océan Indien. Journées scientifiques sur les maladies infectieuses dans la région Sud-ouest de l'Océan indien, Université de La Réunion, St. Clotide, La Réunion.

Goodman, S. M. The unique biota of Madagascar and why it is important. Presentation made in Antananarivo to visiting student group from The University of Chicago Business School.

Goodman, S. M. The bats of Madagascar: History of colonization, speciation, and measures of species richness and endemism. Invited plenary lecture XI International Conference on African Small Mammals, The University of Swaziland, Swaziland.

Raselimanana, A. P. Biodiversité, Science de la nature et jeunes biologistes et naturalistes malgaches : Quels défis à relever ? Colloque national organisée par TWAS Madagascar Chapitre sur le thème « La recherche scientifique et les jeunes chercheurs ». Malagasy National Academy, Antananarivo

Soarimalala, V. & Goodman, S. M. Evolution of research on the tenrecs of Madagascar and importance associated with conservation. XI International Conference on African Small Mammals, The University of Swaziland, Swaziland.

MALAGASY NATURE

Our intention with the scientific review *Malagasy Nature* is to publish in Madagascar a peer-reviewed journal including articles of high scientific and technical standards. Manuscripts in French or English are passed through a review and editorial process. We work closely with Malagasy authors, particularly graduate students and young researchers, to help them understand the process of composing, writing and editing scientific articles. In many cases, the first publication of a researcher poses numerous problems and *Malagasy Nature* provides the means for these individuals to navigate across this hurdle. Further, the journal allows Malagasy scientists to return information to the scientific world, rather than only being on the receiving end. We consider this a very important professional step for the Malagasy scientific community. *Malagasy Nature* also guarantees the local availability of results of ecological and biological research conducted on the island, as in many cases articles and associated data published in foreign scientific journals are not repatriated to Madagascar.

Marie Jeanne Raherilalao is the Editor of *Malagasy Nature* and is aided by a group of Associated Editors. At least one volume of the journal is published each year. The editorial board of *Malagasy Nature* is composed of both national and international scientists, from the Anglophone and Francophone worlds, made up of the following individuals:

Head editor
Marie Jeanne Raherilalao

Associated editors
Steven M. Goodman
Achille P. Raselimanana
Malalarisoa Razafimpahanana
Voahangy Soarimalala
Editorial committee

Birds
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Olivier Langrand

Mammals
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Christopher Birkinshaw
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History/Archeology
Henry Wright
Chantal Radimilahy

Paleontology
John Flynn
David Burney

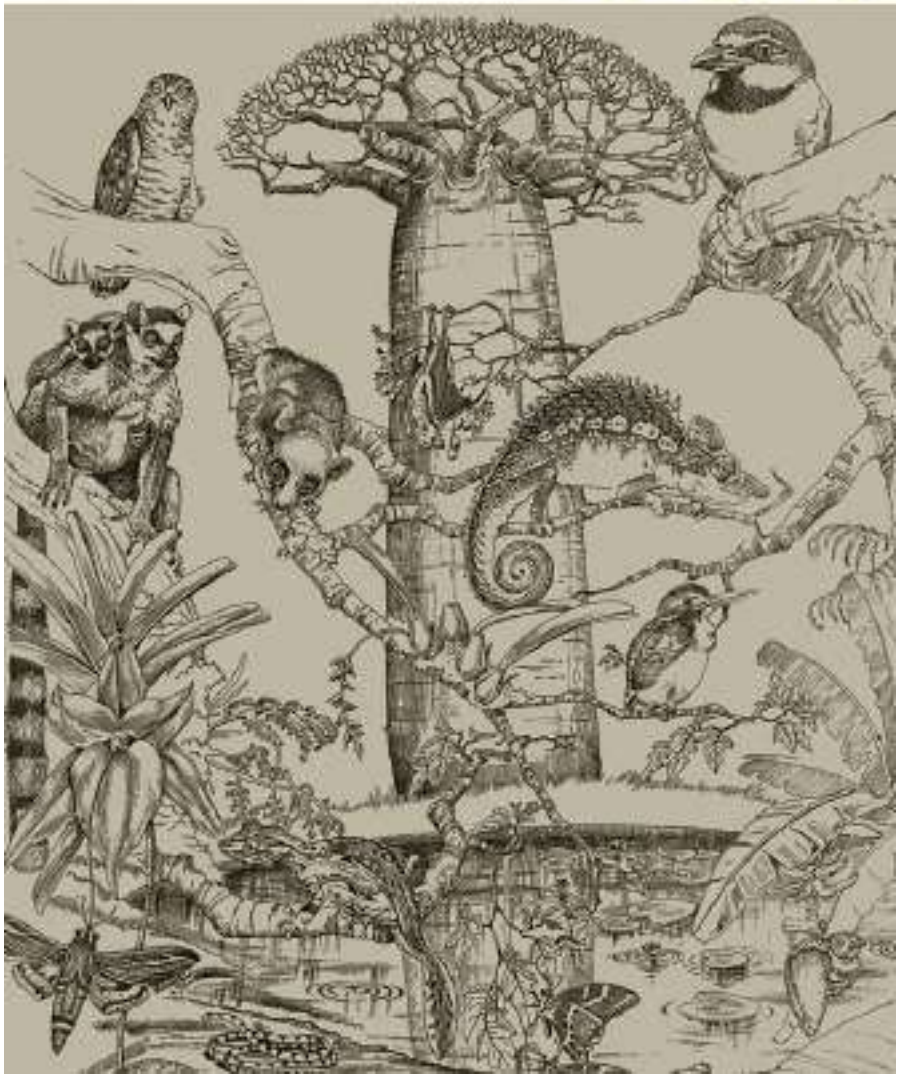
Contents of the issue of *Malagasy Nature* published in 2011

Volume 5 (2011, 145 pp.) –

The most recent issue of the journal was published in December 2011 and contains the following articles:

- Structure dentaire : Implication pour la Paléoécologie des Traversodontidae (Eucynodontia) du Trias de Madagascar. *Malagasy Nature* 5 : 1-13. (Lovasoa Ranivoharimanana).
- Phenology of different vegetation types in Tsimanampetsotsa National park, southwestern Madagascar. *Malagasy Nature* 5:14-38 (Yediya Ratovonamana, Charlotte Rajeriarison, Edmond Roger & Jörg U. Ganzhorn).
- Analyse structurale des formations végétales du Parc National d'Andohahela, habitat de *Microcebus* spp. (Sud-est de Madagascar). *Malagasy Nature* 5 : 39-58 (Tahiana Andriaharimalala, Edmond Roger, Charlotte Rajeriarison & Jörg U. Ganzhorn).
- Conservation status of some commercialized succulent species of Madagascar. *Malagasy Nature* 5: 59-67 (Bako H. Ravaomanalina, Andrilalao M. Rakotonavolona & Bakolimalala Rakouth).
- Diet of the Mascarene grass frog, *Ptychadena mascareniensis*, in Madagascar. *Malagasy Nature* 5: 68-74 (Tolojanahary N. L. Fatroandr ianjafinonjasolomiovazo, Noromalala R. Rasoamampionona, David R. Vieites & Miguel Vences).
- Un premier aperçu de la diversité herpétofaunique d'un bloc forestier isolé, la foret sèche de Beanka, dans la partie oust de Madagascar. *Malagasy Nature* 5: 75-88 (Toky Randriamoria).
- Habitat préférentiel d'*Uroplatus giganteus* (Reptilia, Gekkonidae), dans la complexe de la Montagne d'Ambre, Nord de Madagascar. *Malagasy Nature* 5: 89-103 (Malalanirina Ingady).
- A case of the sympatric occurrence of *Microgale brevicaudata* and *M. grandidieri* (Afrosoricida, Tenrecidae) in the Beanka Forest, Maintirano. *Malagasy Nature* 5: 104-108 (Steven M. Goodman, Haridas Zafindranoro & Voahangy Soarimalala).

Malagasy Nature



- Inventaire de chauves-souris dans la concession forestière de Kirindy CNFEREF, Morondava, Madagascar. *Malagasy Nature* 5 : 109-120. (Claude Fabienne Rakotondramanana & Steven M. Goodman).
- Bats of the Beanka Forest, a limestone karstic zone near Maintirano, central western Madagascar. *Malagasy Nature* 5: 121-128 (Beza Ramasindrazana & Steven M. Goodman).
- Sakalava weaver (*Ploceus sakalava*) nesting association with raptors: An alternative hypothesis. *Malagasy Nature* 5: 129-131 (Charlie Gardner, Louise Jasper & Xavier Vincke).
- Des Molossidae dans un arbre gite de la région de Menabe central : description et biologie. *Malagasy Nature* 5 : 132-135. (Claude Fabienne Rakotondramanana).

MEASURES OF ADVANCEMENT ASSOCIATED WITH *MALAGASY NATURE*

One of the goals of *Malagasy Nature* is for Malagasy students and researchers to have a forum where they can publish articles at international standards and advance with this critical aspect of their professional development. Below are some summary statistics on the configuration of authorship of the articles published to date (volume 1-5).

- Total number of articles published – 54,
- Number of articles with Malagasy co-authors – 25 (60%),
- Number of articles with Malagasy single authors – 17 (32%),
- Number of articles with multiple authors and first author is Malagasy – 16 (30%),
- Number of articles with non-Malagasy authors – 10 (19%).

Hence, given the important rates of Malagasy participation in the journal, we are encouraged that this aspect of advancing the professional development of national authors is being met.

FINANCING *MALAGASY NATURE*

The publication of the first four numbers of *Malagasy Nature* was subsidized by a grant from the John D. and Catherine T. MacArthur Foundation, which has now ended. For the next few years, we have received some grant support for the journal, and the process of completely shifting over to 100% subscription support can be slightly deferred. With the mailing of the fourth volume of the journal in late 2010, an insert was included for individuals and institutions to subscribe to the journal, and the aspect of auto-financing for the journal has commenced.

One of the most important current costs for the journal is printing. As the Vahatra website is now up and running (see below), our intention will be to shift the journal from a printed to an on-line format. We are currently developing this aspect, including a password system for subscribers to have access to the on-line versions of the journal. We anticipate that this will be functioning by the end of 2012.

WEBSITE

Vahatra has created a bilingual website (English and French) for the dissemination of information on its pedagogic and research activities. The site address is: www.vahatra.mg. Madame Malalarisoa Razafimpahanana, member of Vahatra, is the webmaster, which facilitates updates. We welcome your comments on the site and its contents.

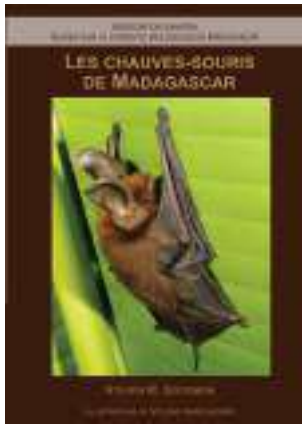
THE ASSOCIATION VAHATRA HAS ITS OWN PUBLISHING HOUSE!

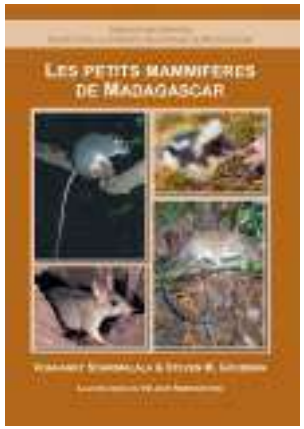
The year 2011 marked an important advancement for the Association Vahatra with the creation of its own publishing house. The first major project is a series entitled “Guides sur la biodiversité de Madagascar” [Guides to the biological diversity of Madagascar].

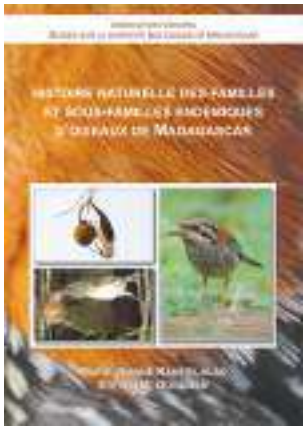
For people that have grown up over the past 40 years in North America or western Europe, information on regional faunas and floras was readily available in a remarkable number of field guides. These types of books, generally arranged thematically by taxonomic group (e.g. ferns, reptiles, birds, etc.) and region, revolutionized making information on biodiversity available and penetrable by members of most age groups of western societies. These guides provide an in-depth window into a variety of organisms, the means for individuals to become associated with different groups near where they live or travel, and, most critically, integrating this familiarity into how they conceive the beauty and importance with the natural world. It is not an exaggeration to state that these types of guides have led to the "greening" of numerous sectors of western society. For a country that is so rich in plants and animals, as well as of being of international conservation concern, the lack of such books is an enormous void that the Association Vahatra strongly believes need to be filled.

In 2011, three different books were published in the series, which is edited by Marie Jeanne Raherilalao and Steven M. Goodman and designed and typeset by Madame Malalarisoa Razafimpahanana:

1. *Les chauves-souris de Madagascar* [The bats of Madagascar] by Steven M. Goodman, 2011, 129 pp.







2. *Les petits mammifères de Madagascar* [The small mammals of Madagascar] by Voahangy Soarimalala and Steven M. Goodman, 2011, 176 pp.
3. *Histoire naturelle des familles et sous-familles endémiques d'oiseaux de Madagascar* [The natural history of the families and sub-families of endemic Malagasy birds] by Marie Jeanne Raherilalao and Steven M. Goodman, 2011, 146 pp.

The intent of the series is further explained in the introduction to the books mentioned above:

> "Over the past decades enormous strides have been made in documenting and describing the flora and fauna of Madagascar, aspects of ecological communities, and the origin and diversification of the multitude of species on the island. Much of this information has been presented in technical scientific papers or books, which are not accessible or penetrable to many people interested in pure natural history. Further, these books, which are only occasionally available in local bookshops, are expensive and often in English. On the other hand, a considerable effort has been made to diffuse information to school children on ecology, conservation, and the natural history of the island through journals and clubs such as *Vintsy* organized by WWF-Madagascar. In our opinion, an important void needs to be filled between these two extremes, providing interesting and not highly scientific overviews on the extraordinary biodiversity of Madagascar. That is the intent of the current series and a glossary is presented in the final section to help with the definition of certain technical terms that are presented in the text in bold script.

We strongly believe that in order to aid with the dissemination of information to the Malagasy people about their natural patrimony, aiding with the "greening" of views associated with resource utilization and conservation implementation, it is critical that more pedagogic books are available at

reasonable prices. We hope that this series will play a role in meeting these goals."

A fourth volume entitled "Les Carnivora de Madagascar" [The Carnivora of Madagascar] by Steven M. Goodman is in advance state of production and should be out in the first half of 2012. The production of the first three books in the series was financed by a grant from the Critical Ecosystem Partnership Fund. A grant has been recently received by the Ellis Goodman Family Foundation [No relationship to Steve Goodman, just a coincidence with the family name] for an additional five guides in the series over the next few years.

Another project by the Association Vahatra Press is the publication of "An atlas to the land vertebrates of Madagascar". This project partially financed by the John D. and Catherine T. MacArthur Foundation is a synthesis of data Vahatra associated scientists and students, as well as other field biologists, have gathered over the past decades, and comprising specimens scattered in museums around the world. Different types of modeling exercises will be included to help explain the distributional patterns of these organisms. As soon as the atlas is published, a large database associated with the analyses will be released into the public domain.

A NEW DECISIVE PROGRAM – "SCIENCE FOR THE PEOPLE"

The Association Vahatra is keenly aware that the exclusive approach of advancing aspects of science for a limited portion of Malagasy society, specifically national graduate students, is important, but a large and critical portion of Malagasy society is left out of such programs. A critical aspect for the future of Madagascar and its biodiversity is to translate lessons learned by scientists to the needs and views of people living in the countryside, particularly close to remaining forested areas. With these different points in mind, a project entitled "Science for the people" and with financing from the John D. and Catherine T. MacArthur Foundation, was launched in 2011. Here are some of the ideas and actions of this project.

An important portion of the Malagasy population, living at least in part via subsistence farming, occur in areas where conservation actions to protect the remaining forested areas are critical. While many of these people have considerable knowledge of the environment and natural cycles associated with their agrarian lifestyle, as well as a clear stake in the impact of forest burning and clearing in their livelihoods, they lack access to new information derived from different scientific fields that might have an important bearing on future strategies. We believe that introducing concepts of modern conservation biology, management, and climatic change, explaining the importance of the local forest biota in a national and international sense, and bolstering aspects of ecotourism, can serve a critical role in providing new perspectives and tools for future management actions for these populations.

The key for this to unfold in the correct manner is the type of communication tools employed. Specifically those that will provide rural populations with needed insight to help them advance towards the mitigation of certain impending ecological problems. Hence, to create a synergy between indigenous knowledge and science, a team of Malagasy "biodiversity educators", travel to rural villages to conduct biodiversity education programs.

Using a traditional Malagasy system of public forums, the "biodiversity educators" travel to about 20 villages per year within a given region of the island to transfer different types of scientific and ecological information to local populations using a variety of media (talks, discussions, films, posters, tee shirts, etc.). These forums would provide a greater understanding of what scientific knowledge can offer in ameliorating their lives. Further, in villages

with primary schools, considerable emphasis is placed on presenting clear and informative messages and lessons to school kids, who are the future of the nation.

OTHER CAPACITY BUILDING PROGRAMS FOR MALAGASY STUDENTS AND RESEARCHERS

Lecture series

A lecture series has been organized at the Vahatra office to allow dissemination of new research, monitoring, and conservation themes concerning Madagascar. Another intent for the series is the exchange of ideas, both in a formal setting in the context of the lectures, and in a more informal setting of a cocktail after each lecture. To meet this goal individuals and organizations from the private, academic, and governmental sectors are invited to participate. A relatively large room at the Vahatra office, which normally serves as the students' working space, is easily converted into a lecture hall, with folding chairs rented from a nearby restaurant. An attempt has been made to hold these lectures every 2-3 months, but with the political problems since the first portion of 2009, this was complicated to arrange. Lectures are attended by 40-80 people and have been enthusiastically received by the Malagasy scientific and conservation communities.

Field Schools

Each year Vahatra holds at least one field school each year for aspiring young Malagasy graduate students to help advance their knowledge and interest in field biology. These field schools are also often held with students and professors from other countries to help build links, a greater international

context for science and a broader sense of ecosystem and knowledge of different organisms. In 2011, two different field schools were presented.

In October, Marie Jeanne Raherilalao, Voahangy Soarimalala and Achille Raselimanana organized a field school within the Tsimanampetsotsa National Park and in the context of collaborative project (SULAMA) with The University of Hamburg and the Malagasy national university system. Ten students from three universities (Antananarivo, Fianarantsoa and Toliara) and three agents of Madagascar National Parks (MNP) attended the field course.

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The second field school was a joint event between the University of Antananarivo-Vahatra-and South African universities (University of Kwa-Zulu Natal and University of Venda) and took place in the spiny bush forest of Salary bay, north of Toliara. Three Malagasy students from The University of Antananarivo, one professor from The University of Toliara, and four students and three professors from the universities of Kwa Zulu Natal and Venda (South Africa) attended the program.

During the course of these multidisciplinary field schools, these students have contact with professional biologists working in different disciplines of zoology, providing an excellent means for each student to decide what group of animal or type of study is the most interesting for their continuing studies. These outings are often eye-opening experiences for the young Malagasy participants. At the same time, they provide an excellent means for Vahatra to pick the students they would like to work with in advancing their DEA or Ph.D. studies. Several participating students from South Africa have mentioned that their participation in the field schools was a "life-changing" experience.

VAHATRA INFRASTRUCTURE

During the course of this past year, several changes have taken place in aspects of Vahatra's infrastructure:

- A botanical research group from the Conservatoire et Jardin botanique de la Ville de Genève has rented space in the annex building that was constructed in 2009-2010. This group is creating a botanical capacity building program with parallels to the Association Vahatra (See section "Active collaborations of Vahatra", below).
- The lower section of the new annex building has been terminated with the construction of a separate storage room for research materials and the construction of a vivarium to keep live animals for different research projects.

- The outside of the two buildings have received a new coat of paint with a fresh brick orange color.
- Numerous repairs have been made to the wiring and plumbing of the association buildings.

CURRENT GRANTS

- John D. and Catherine T. MacArthur Foundation – Continued capacity building for Malagasy conservation biologists: support for Vahatra and advancement to higher levels of professionalism, 2007-2010, this was extended for six months until June 2011.
- Centre de Recherche et de Veille sur les Maladies Emergentes dans l'Océan Indien -- Rift Valley Fever in Indian Ocean Islands, 2009-2011. This project was closed as planned in late 2011.
- John D. and Catherine T. MacArthur Foundation - Assessing the impacts of climatic change on high mountain animals and tests of new biogeographic hypotheses to understand biotic diversity on Madagascar, 2009-2012.
- Volkswagen Foundation -- The advancement of Malagasy conservation biologists, 2007-2012.
- Critical Ecosystem Partnership Fund (CEPF) – Infrastructure support for the Malagasy Association International Vahatra: a major element in the advancement of Malagasy conservation biologists and Malagasy science, 2009-2010, this was extended until late 2011.
- John D. and Catherine T. MacArthur Foundation -- The dissemination of scientific information to the Malagasy people, 2010-2013.
- Vontobel Foundation -- Constitution of a team of Malagasy biologists trained in flora and fauna studies for conservation planning, 2011-2013.
- Ellis Goodman Family Foundation – Financing for the "Guides sur la diversité biologique de Madagascar" series, 2012-2015.

ACTIVE COLLABORATIONS OF VAHATRA

In order for Vahatra to develop new directions for the Malagasy and regional scientific communities, a number of collaborative projects have been advanced. Below is a listing of some of these collaborative projects:

- The University of Antananarivo, Department of Animal Biology – Vahatra closely collaborates with this department in different manners including training and mentoring of students, seminars and classes, field schools, etc. All of the scientific founding members of Vahatra have professional links to this department. The ability for the association to advance on numerous fronts particularly associated with student capacity building and field research is directly based on this collaboration.

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- Centre de Recherche et de Veille sur les maladies émergentes dans l'Océan Indien (CRVOI), La Réunion, France – Vahatra is a member of a large-scale project to develop a catalog of diseases occurring amongst wild land vertebrates of the western Indian Ocean. CRVOI through a grant generously supported by FEDER Réunion, Programme Opérationnel de Coopération Territoriale (2007-2013), "Faune

Sauvage-Océan Indien" (project number 31189) is able to subsidize considerable portions of different field projects. Further, researchers and students from Vahatra have taken part in several field trips on Madagascar, nearby islands and continental Africa to obtain samples. The laboratory analyses of this project are advancing rapidly and a number of very interesting results are becoming available. Several different viruses and other diseases exist in the region that may have important impact on human health. Several papers have been submitted or are being prepared to present these results and their implications.

- Institut de Recherche et Développement (IRD), Montpellier, France – a project with this organization terminated in 2011 on the role wild small mammals as potential reservoirs for Rift Valley Fever in a zone of Madagascar where this disease has been a serious problem amongst cattle and humans.
- Institut Pasteur, Antananarivo and Paris – part of the consortiums associated with the CRVOI project mentioned above, as well as the Rift Valley Fever project, include the Institut Pasteur. Students and researchers from Vahatra have conducted a number of joint field missions with researchers and technicians from the Institut Pasteur.
- University of Kwa-Zulu Natal, Durban, South Africa – part of a southern hemisphere network-collaboration project. Students and professors from University of Kwa-Zulu Natal, Durban, work in collaboration with Vahatra students and researchers in Madagascar, taking part once per year in field schools held in forest-settings in Madagascar. These field schools have been financed by a grant from the Volkswagen Foundation, which ends in late 2012. Over the past few years, at least six South African students have conducted a portion of their studies on Malagasy animals, in collaboration with Malagasy counterparts at Vahatra. Further, Malagasy students and professors have attended specially arranged courses in Durban labs concerning molecular genetic research and ecological modeling. Finally, one of the Durban counterparts has recently moved to The University of Venda, in northern South Africa, and several students from that university have attended field schools in Madagascar.

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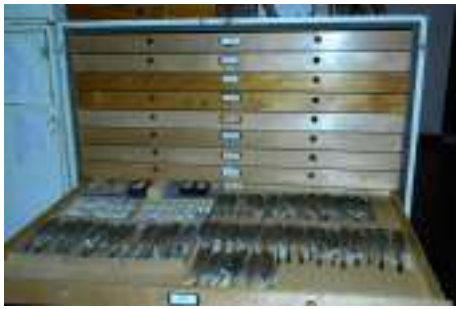
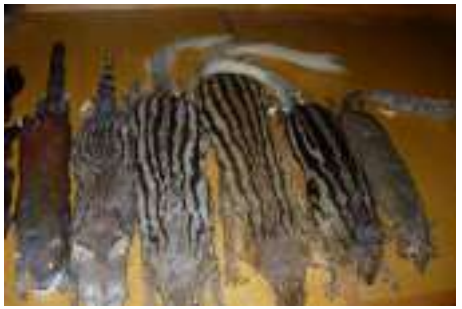
- The University of Johannesburg, South Africa – Vahatra has a collaboration with a genetics laboratory at this university associated with a project on climatic change impacting animal distributions in the high mountains of Madagascar. The salary of a technician and lab costs are paid for by a grant to the Field Museum/Vahatra from the MacArthur Foundation. The collaborator in this project Bettine Jansen van Vuuren was formerly at Stellenbosch University and moved in the latter portion of 2011 to Johannesburg.
- The University of Melbourne, Australia – we have an ongoing collaboration with Dr. Belinda Appleton in the Genetics Department on molecular studies associated with a group of Malagasy bats.
- Biodiversity Conservation Madagascar (BCM), Antananarivo and Mauritius – Vahatra has a collaborative project with this organization to inventory two different forest blocks they manage and to help advance research and conservation activities.

- Conservatoire et Jardin botaniques de la Ville de Genève, Switzerland – A joint grant has recently been received from a Swiss private bank foundation under the title, "Constitution of a team of Malagasy biologists trained in flora and fauna studies for conservation planning." The project involves joint field studies to develop research programs on the interactions between local fauna and flora, with the view of developing aspects of ecosystem functioning. The Geneva team has installed in the new annex building, to create closer ties and working relations with Vahatra. In late 2011, a joint filed trip was conducted to the Beanka Forest, in the western portion of Madagascar.

"COLLECTION SPACE", UNIVERSITY OF ANTANANARIVO

One of the permanent staff members of Vahatra, Dr. Voahangy Soarimalala, also is the principal curator of the "Collection Space" in the Animal Biology Department at the University of Antananarivo, which is managed at the standards of an international natural history museum. During the northern summer of 2009, she spent seven weeks at the Field Museum where she worked closely with curators and collection managers in the Department of Zoology (birds, reptiles and amphibians, mammals, fishes, insects, invertebrates). Special attention was given to the preparation, cataloguing, stocking, and shipment of specimens. This was an excellent experience for her and she returned to Madagascar with a much greater understanding of curatorial techniques.





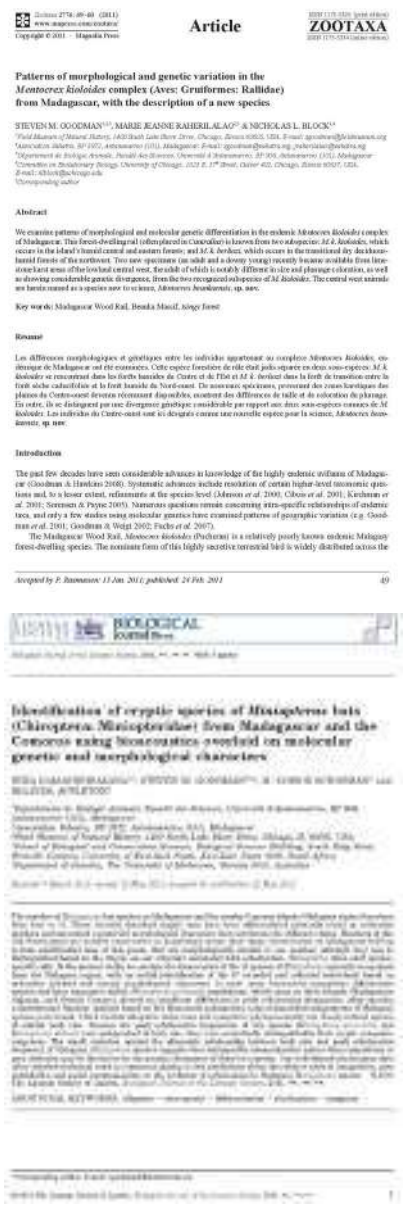
The field of animal systematics has remarkably advanced for numerous Malagasy field biologists, who are playing a very active role in documenting the biota of their island. This includes the collection of specimens associated with a variety of different studies. The "Collection Space" has become the principal museum on Madagascar for the deposition of recently collected animal specimens, including about 48,000 cataloged specimens and the holotypes of recently described new taxa. Other than Vahatra scientists and students playing an active role in the deposition and identification of specimens within the museum, they also take part in different activities, such as the recent work with international and national scientists to identify, label, catalog, and curate the frog collection.

Recently, a collaborative convention has been established between Vahatra and ReBioMa to put in portal for accessibility perspective a database concerning Malagasy biodiversity. The main goal of this partnership is to put together technology skills and scientific knowledge to meet information and scientific knowledge circulation needs to be accessible for public and all users.

NEW SPECIES OF ANIMALS DESCRIBED BY VAHATRA SCIENTISTS AND STUDENTS IN 2011

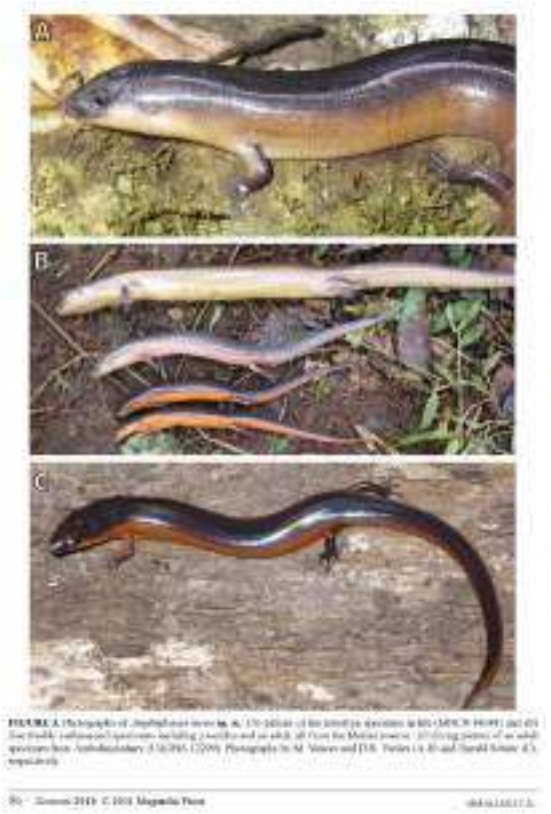
One of the direct results of the biological inventories conducted by Vahatra and associated voucher specimens collected, is the discovery of animal species previously unknown to science. Based on follow-up morphological and genetic research conducted on these specimens, several new species to science have been described in 2011:

1. *Mentocrex beankaensis* Goodman, Raherilalao & Block, 2011, *Zootaxa* 2776: 49–60.
   It is relatively rare anywhere in the world to find a new species of bird to science and in this case, it was a relatively large diurnal forest rail living in the central western portion of Madagascar. This discovery made both the local and international news.
2. *Miniopterus egeri* Goodman, Ramasindrazana, Maminirina, Schoeman & B. Appleton, 2011, *Zootaxa*, 2880: 1-19.
   Over the past few years, a number of new bats have been described from Madagascar and with this discovery the number of species on the island increases to 44.
3. *Amphiglossus meva* Miralles, Raselimanana, Rakotomalala, Vences & Vieites, 2011, *Zootaxa*, 2918: 47–67.
   This beautifully colored large rainforest dwelling skin was described from material collected in the northeastern portion of Madagascar. It appears to be restricted to rainforest and lives under rotting logs and areas with think leaf litter.


Article

ZOOTAXA

Patterns of morphological and genetic variation in the *Mentocrex kioloides* complex (Aves: Gruiformes: Rallidae) from Madagascar, with the description of a new species



ACTIVITIES OF VAHATRA PERMANENT MEMBERS DURING 2011

January

- Marie Jeanne Raherilalao and Steve Goodman commenced writing the text for a book entitled “Histoire naturelle des familles et sous-familles endémiques d’oiseaux de Madagascar”. Marie Jeanne also provided final comments on the book written by Steve Goodman “Les chauves-souris de Madagascar”. Both books are part of the series “Guides sur la diversité Biologique de Madagascar” published by the Association Vahatra.

- Voahangy Soarimalala continued to curate the animal collection at the Biology Department, University of Antananarivo, associated with the Vahatra database project. Together with Steve Goodman, she also worked on the text and illustrations for an additional book in the guide series "Les petits mammifères de Madagascar". During this month one of Voahangy's students at the Institut des Sciences et Technique de l'Environnement (ISTE), Fianarantsoa, received her "Licence" degree. Further, as a member of the network group on "Climate Change in Madagascar", she attended a workshop in Antananarivo following this theme.
- Achille Raselimanana spent much of the month refining his "Habilitation à Diriger des Recherches (HDR) thesis, which is the highest academic qualification a scholar can achieve by their own pursuit in Europe. He also worked with a student on the advancement of their Diplôme d'Etudes Approfondies (DEA) memoir, roughly equivalent to a MSc. in the Anglophone system, before its submission to the University of Antananarivo lecture committee.
- During much of the month, Steve Goodman was a visiting scholar at The University of Stellenbosch, South Africa, where he gave several lectures and worked with a colleague on manuscripts associated with the genetics of Malagasy animals. Also during this period, he gave an invited plenary talk at the South African Society of Systematic Biologists meeting in Grahamstown, South Africa.

February

- Steve Goodman entered in the final stages to finalize the bat book, working together with the co-editor of the series, Marie Jeanne Raherilalao. Further, Marie Jeanne advanced on the text for the bird book, as well as editing articles for the scientific journal *Malagasy Nature*. She also served as a committee member of two DEA memoirs presented at The University of Antananarivo.
- Voahangy Soarimalala submitted an article to the IUCN newsletter on Afrotheria. She also conducted a reconnaissance trip for the preparation of a field mission associated with the "Emerging disease" project on small mammals in collaboration with colleagues at the Institut Pasteur de Madagascar (IPM) and Centre de Recherche et de Veille sur les Maladies Emergentes dans l'Océan Indien (CRVOI). She also continued to work on the small mammal guide. She also attended, with Steve Goodman and Vahatra Ph.D. student, Tony Andrianaivo a meeting in Antananarivo concerning a collaborative research project on Rift Valley Fever in the western Indian Ocean region.
- Steve was a member of a Ph.D. thesis committee at the University of Toliara and conducted fieldwork in Mozambique associated with CRVOI and the "Emerging diseases" project.

March

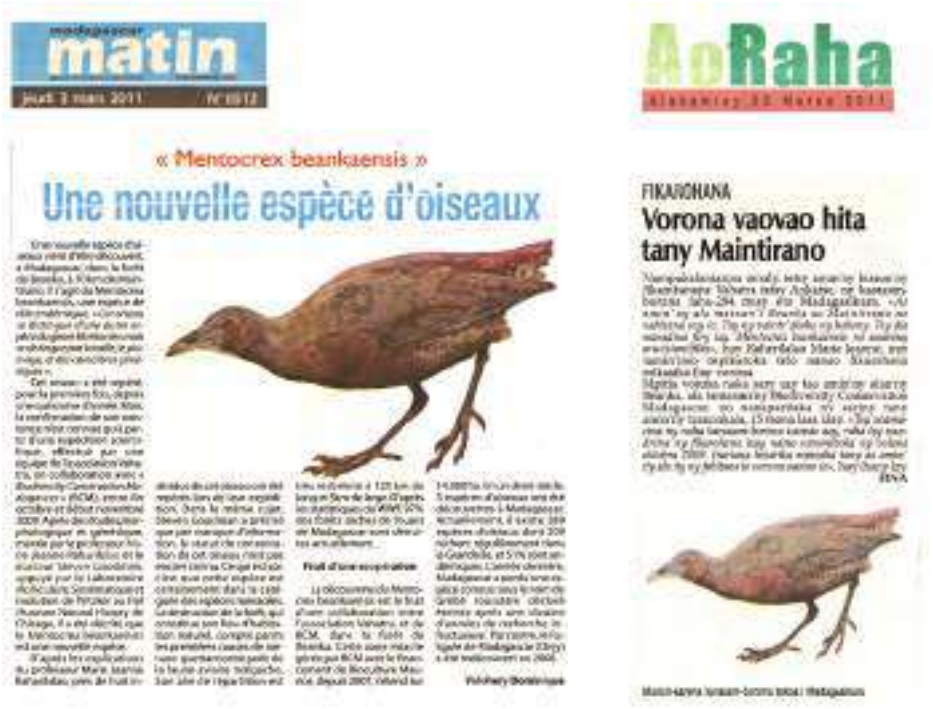
- Marie Jeanne Raherilalao and Steve Goodman continued working on the small mammal and bat books. Malalarisoa Razafimpahanana and Steve worked together on illustrations, format and design of the first guide. In collaboration with Steve and Achille Raselimanana, Marie Jeanne contributed to the elaboration of three DEA memoir projects associated with the fauna of the western dry forest of Madagascar. She was also a committee member of two other DEA memoirs presented at the end of the month.
- Steve was a jury member for two different HDR theses presented at The University of Antananarivo. He also gave an introductory lecture to newly recruited Peace Corps members about the natural history of Madagascar.
- Voahangy Soarimalala carried out field research in the Lakato Forest associated with the IPM and CRVOI collaborative project on

"Emerging diseases". She also continued with her activities of curating the vertebrate collection at The University of Antananarivo and working with Steve Goodman on the small mammal guide.

- As members of the Faculty of Science and affiliated with the Association Vahatra, Marie Jeanne, Voahangy and Achille were involved in the scientific orientation of students from the Animal Biology Department, The University of Antananarivo, in collaboration with The University of Hamburg, for the project entitled Sustainable Land Management on the Mahafaly Plateau (SULAMA) in southwestern Madagascar. They attended, with Steve Goodman, a SULAMA workshop held in Antananarivo, associated with the organization and the implementation of this project. As members of the "Taxonomic Board Authority" for the "Réseau de la Biodiversité de Madagascar" (REBIOMA) database, all four scientific members of Vahatra revised the classification and scientific names of different vertebrate groups associated with this project. Achille, Marie Jeanne, and Voahangy also developed the Terms of Reference for a Vahatra project under the title "Science for the people" and assisted with the planning of an associated mission of the project staff.
- Towards the beginning of the month, a press conference was held at the Vahatra office in collaboration with the organization Biodiversity Conservation Madagascar associated with the discovery and description of a new species of rail found in the Beanka Forest of western Madagascar during a Vahatra expedition in 2009. The discovery of a previously unknown bird species is a major event; this news was covered in the Malagasy and international media (see press clippings).

April

- After an extended strike since the first portion of the year, classes at The University of Antananarivo commenced at the beginning of


madagascar matin
jeudi 3 mars 2011 N°1012
« Mentocrex beankaensis »
Une nouvelle espèce d'oiseaux
AoRaha
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this month and Marie Jeanne Raherilalao, Achille Raselimanana and Voahangy Soarimalala concentrated on associated courses. These three individuals also spent considerable time helping to edit and revise several different DEA memoirs.

- Both Marie Jeanne and Achille were committee members for two DEA memoirs and on the review committee for another memoir. Marie Jeanne worked with Malagasy students and researchers in the amelioration of papers, and the process of corrections.
- Marie Jeanne and Voahangy continue curating vertebrate specimens in the collection room of the Animal Biology Department, University of Antananarivo. They also furnished regularly technical and scientific assistance to the "Science for the People" team.

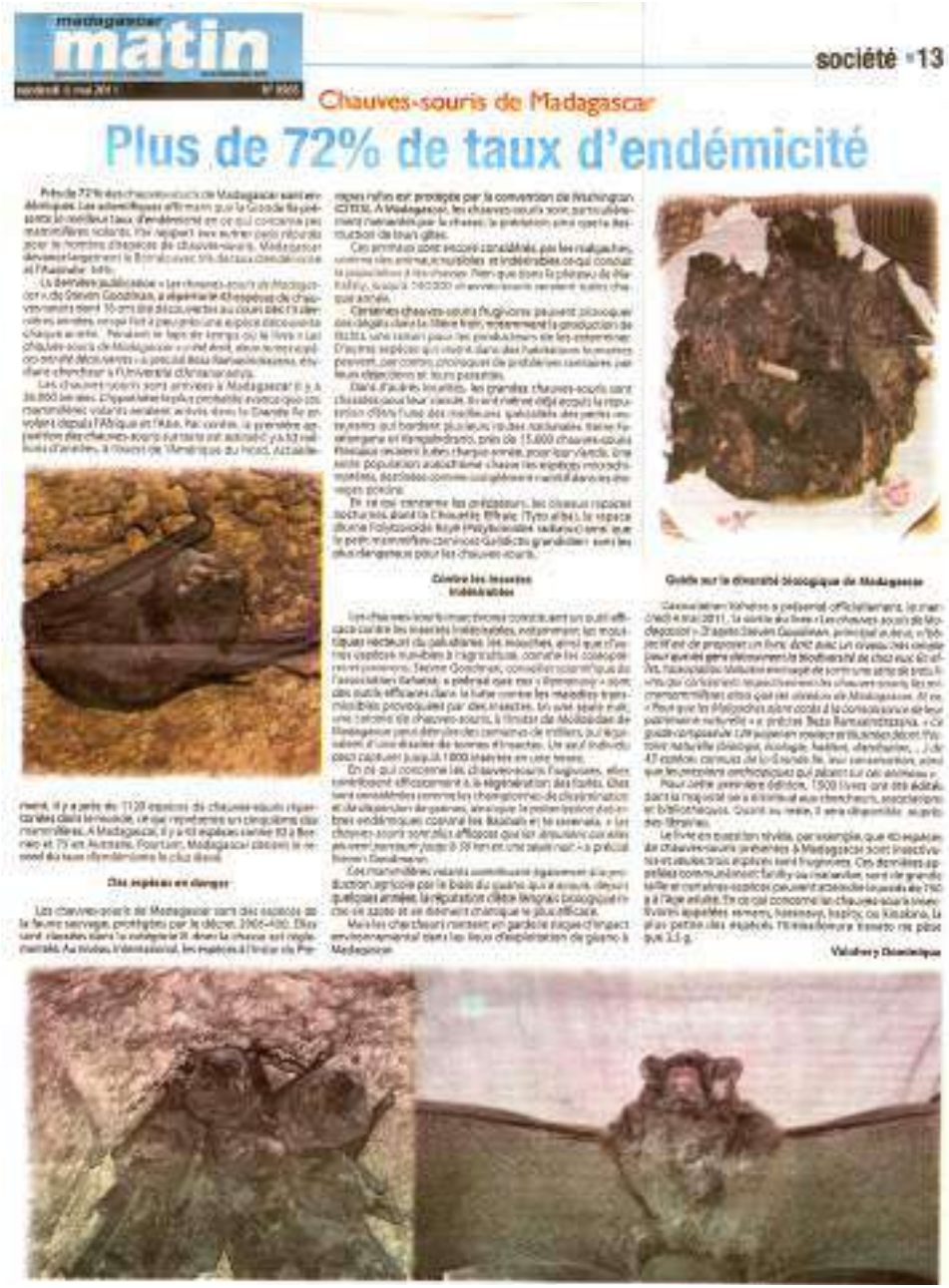
- Steve Goodman conducted fieldwork on the bats of Mauritius with a colleague from CRVOI in the context of the “Emerging diseases” project. With Malalarisoa Razafimpahanana, he followed the printing process of the bat book.

May

- All four scientific members of Vahatra were busy during this month with different teaching responsibilities, writing and revising articles, including aspects of the journal *Malagasy Nature*. Marie Jeanne Raherilalao, Malalarisoa Razafimpahanana, Steve Goodman and Voahangy Soarimalala worked on the advanced version of the small mammal book. Marie Jeanne and Steve also advanced considerably on the bird book. Achille Raselimanana acted as an outside reviewer for articles submitted to two different scientific journals -- *African Journal of Herpetology* and *PloS One*. Marie Jeanne and Achille were also members of the lecture committee for a DEA memoir.
- During this month, in collaboration with colleagues at the “Conservatoire et Jardin botaniques de la Ville de Genève” (CJB), all of the scientific members of Vahatra contributed in the conception and elaboration of a grant application to a private Swiss bank Foundation to finance different field projects.
- At the beginning of the month, the book published by Association Vahatra and entitled “Les chauves-souris de Madagascar” was formerly presented to the Malagasy scientific community. The event was covered in the Malagasy media.

June

- University teaching activities consumed an important part of the month for Achille Raselimanana, Marie Jeanne Raherilalao and Voahangy Soarimalala. Voahangy was a jury member for three different “Licence” degrees at The University of Fianarantsoa and Marie Jeanne and Achille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Chauves-souris de Madagascar

Plus de 72% de taux d'endémicité

for a DEA memoir at The University of Antananarivo. Voahangy gave a tour of the collection space at The University of Antananarivo for a group of visiting Canadian students.

- The book entitled "Les petits mammifères de Madagascar" was completed and sent to the printer.
- Steve Goodman left Madagascar for his annual northern summer visit to The Field Museum in Chicago. On his way to the USA, he worked in the Muséum national d'Histoire naturelle, Paris, and The Natural History Museum, London, on different projects concerning Malagasy mammals.

July

- Voahangy Soarimalala at the ISTE in Fianarantsoa and Marie Jeanne Raherilalao and Achille Raselimanana at The University of Antananarivo continued with different teaching responsibilities. Marie Jeanne was member of the lecture committee for two DEA memoirs and one "Diplôme d'études supérieures spécialisées" (DESS) diploma. Together with Steve Goodman, she advanced on the bird book.
- Voahangy and Steve attended the "XI International Conference on African Small Mammals", which was held at The University of Swaziland. Steve presented an invited plenary on the systematics of bats and Voahangy and Steve co-presented a paper on Malagasy tenrecs. The meeting, which was attended by specialists from Africa and across the world, was an opportunity for them to present the bat and small mammal guides published by the Association Vahatra to attending researchers. After the presentation of different details to the permanent committee of the conference organizers by Voahangy and Steve, Madagascar was chosen as the host of the "XII International Conference on African Small Mammals", which will be in 2015.
- Achille visited the South African National Biodiversity Institute (SANBI) in Cape Town, in part to develop new collaborations with Dr. Krystal Tolley of that institution. The visit was fruitful and they have embarked on several projects concerning the molecular systematics of Malagasy geckos and potentially projects on chameleons.
- Achille, Voahangy and Marie Jeanne provided technical assistance to students associated with the SULAMA project, in collaboration with The University of Hamburg. Achille and Marie Jeanne were members of lecture committee for the DEA of a student at The University of Antananarivo and associated with Vahatra, and served as jury members for two other DEA memoirs at the same university.

August

- The principal activities for Achille Raselimanana, Voahangy Soarimalala and Marie Jeanne Raherilalao during this month included different teaching responsibilities, as well as the review of scientific articles for *Malagasy Nature* and DEA memoirs of different students. Marie Jeanne was a jury member for a DEA memoir.
- Voahangy and Achille conducted a reconnaissance visit to Tsimanampetsotsa National Park and to Salary Bay in southwestern Madagascar to help prepare field school at these two sites before the end of the year.
- All scientific members of Vahatra contribute on the updating and verification of the Vahatra database on Malagasy vertebrates in the context of a forthcoming "Biodiversity Atlas", as well as making the data available on line to the public.
- Achille finalized his HDR memoir for distribution to the different committee members.

September

- Marie Jeanne Raherilalao was actively involved in teaching activities at The University of Antananarivo and, together with Steve Goodman,

the completion of the bird book and the finalization of volume 5 of *Malagasy Nature*. Voahangy Soarimalala and Steve worked extensively on the advancement of the Vahatra database for the "Biodiversity atlas". Voahangy was also actively involved in the preparation of the field school at Tsimanampetsotsa in the context of SULAMA project and assisting in different aspects of the "Science for the people" project.

- Achille Raselimanana presented his HDR at the University of La Réunion. Steve Goodman was one of the committee members. Steve was also a jury member for a DEA presented by a Vahatra student at the University of Antananarivo.

- Towards the end of the month, the book published by Association Vahatra and entitled "Les petits mammifères de Madagascar" was formerly presented to the Malagasy Scientific community. The event was covered in the Malagasy media.

October

- Voahangy Soarimalala presented a course at the ISTE, Fianarantsoa, and thereafter prepared for a field mission with IPM to the Ankazomivady Forest and in the context of the "Emerging disease" project.
- Marie Jeanne Raherilalao, Voahangy and Achille Raselimanana organized a field school in Tsimanampetsotsa National Park in the context of SULAMA project. Ten students from three universities (Antananarivo, Fianarantsoa and Toliara) and three agents of Madagascar National Parks (MNP) attended the field course.

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Petit mammifère terrestre

Cinquante neuf espèces endémiques à Madagascar

La biodiversité de Madagascar abrite 59 espèces de petits mammifères terrestres endémiques et 5 espèces introduites. Détaillés dans le livre « *Les petits mammifères de Madagascar* » coécrit par les deux scientifiques Voahangy Soarimalala et Steven Goodman, officiellement présenté au public le vendredi 30 septembre 2011, les petits mammifères de Madagascar sont composés essentiellement de tenrec, musaraignes, et rongeurs. D'après l'explication du docteur Voahangy Soarimalala, enseignant-chercheur, le terme « petit mammifère terrestre » désigne les animaux à fourrure, non volant, et qui allaite leurs petits.

Tenrec ecaudatus, (Trandraka) : 100% endémique

La famille de Tenrec ecaudatus, avec 32 espèces, est certainement la plus importante de ces mammifères lipotiens de Madagascar. Elle représente un taux d'endémisme à 100% bien que certaines espèces aient été introduites dans les îles voisines. Plus connues par leurs formes arrondies et leurs poils piquant, les tenrecs de Madagascar n'ont rien à voir avec les hérissons d'Afrique malgré leur faculté de se rouler en boule pour se défendre.

Vingt sept espèces de Nesomyinae endémiques

Près de 27 espèces de rongeurs regroupés dans la sous famille de Nesomyinae, divisé en neuf genres, sont endémiques de Madagascar. La plupart de ces rongeurs sont considérés comme étant micro endémiques car chaque espèce est spécifique d'une forêt donnée. Au cours de la dernière décennie, 10 espèces de rongeurs appartenant à 2 genres différents ont été découvertes dans les forêts naturelles de Madagascar. La plus connue l'Hypogeomys antimena, le plus gros rongeur de Madagascar, pèse plus d'un kilo à l'âge adulte.

Suncus etruscus : le plus petit mammifère terrestre au monde

Le plus petit mammifère terrestre au monde se trouve à Madagascar. Il s'agit du Suncus etruscus, qui ne pèse que 2 grammes à l'âge adulte. Longtemps considéré comme étant endémique, une récente découverte par analyse génétique a démontré que ce micromammifère s'avère être une espèce introduite et proviendrait de l'espèce asiatique S.etruscus. Une autre espèce de musaraigne présente à Madagascar s'appelle le S.murinus plus connu sous les appellations locales de Voalavofotsy, ou Voalavonarabo. Ces deux espèces représentent les musaraignes à Madagascar.

Trois espèces envahissantes

A part les espèces autochtones, la Grande Ile abrite trois espèces de petits mammifères envahissantes. Il s'agit du Rattus rattus, R norvegicus, et Mus musculus plus connues sous l'appellation local Voalavo et Tototy. Connues par les dégâts qu'elles provoquent dans les habitations humaines, ainsi que les productions agricoles, ces espèces introduites seraient capables de coloniser une forêt entière et provoquer des dégâts écologiques considérables.

H.D

- Steve Goodman was a jury member for a DEA memoir presented by a student associated with Vahatra at The University of Antananarivo. He also made a presentation on the biota of Madagascar to a group visiting the island from The Australian National Museum. At the end of the

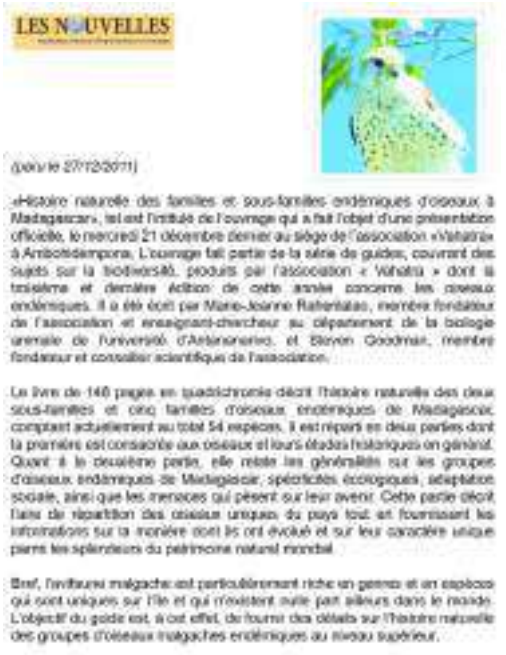
month into early November, Steve also took part as a visiting instructor in the Tropical Biology Association course held in the Kirindy Forest.

November

- Marie Jeanne Raherilalao, Steve Goodman completed the editing of the bird book and volume 5 of *Malagasy Nature*.
- Achille Raselimanana and Marie Jeanne organized an expedition to the Beanka Forest in western Madagascar to conduct a biological inventory and at the same time initiate the research of three DEA students from the Animal Biology Department, University of Antananarivo, and associated with the Association Vahatra.
- Voahangy Soarimalala carried-out a biological investigation in Ankazomivady Forest in collaboration with IPM and CRVOI. This was also an opportunity to train three students from ISTE on sampling technique and appropriate methods on biological assessment.
- Achille, Voahangy, Marie Jeanne and Steve Goodman attended on La Réunion the Steering Committee meeting of the "Faune sauvage" project at CRVOI. Steve also presented at a meeting at The University of La Réunion a talk on the mammals of Western Indian Ocean islands. During the colloquium organized by TWAS Chapter Madagascar in Antananarivo at the Malagasy Academy of Sciences and Arts on the topic "Scientific research and young scientists", Achille gave a talk on "Biodiversity, science of nature and young Malagasy biologists and naturalists: What challenges?

December

- Marie Jeanne Raherilalao was member of the jury for a DEA student that worked with Vahatra and presented their memoir at The University of Antananarivo. Further, continue to supervise the advancement of another DEA memoir, and, as well with Steve Goodman, followed up on the final production stages of the bird book and *Malagasy Nature*. Further, Steve commenced with the writing of a fourth book in the Vahatra guide series, this one entitled "Les Carnivora de Madagascar".
- Voahangy Soarimalala helped edit two memoirs from students from ISTE, Fianarantsoa, and carried out a reconnaissance visit to the Mandalahy Forest for a field school for students from that institution. She terminated her courses for the academic year.
- Achille Raselimanana served on the lecture committee for two DEA memoirs and on the jury for another two DEA memoirs.
- Achille, Voahangy, Marie Jeanne and Steve Goodman organized and implemented a field school near Salary Bay in the southwest. Three Malagasy students from The University of Antananarivo and four students and three professors from the universities of Kwa Zulu Natal and Venda (South Africa) attended the program.
- Towards the end of the month, a book written by Marie Jeanne and Steve and published by Association Vahatra with the title "Histoire naturelle des familles et sous-familles endémiques d'oiseaux de Madagascar" was formerly presented to the Malagasy Scientific community. The event was covered in the Malagasy media. This was the third book in the series published in 2011.


LES NOUVELLES

(jeudi 27/12/2011)

«Histoire naturelle des familles et sous-familles endémiques d'oiseaux à Madagascar», tel est l'intitulé de l'ouvrage qui a fait l'objet d'une présentation officielle, le mercredi 21 décembre dernier au siège de l'association «Vahatra» à Ambohidempona. L'ouvrage fait partie de la série de guides, couvrant des sujets sur la biodiversité, produits par l'association « Vahatra » dont la troisième et dernière édition de cette année concerne les oiseaux endémiques. Il a été écrit par Marie-Jeanne Rahéritalao, membre fondateur de l'association et enseignant-chercheur au département de la biologie animale de l'université d'Antananarivo, et Steven Goodman, membre fondateur et conseiller scientifique de l'association.

Le livre de 148 pages en quadrichromie décrit l'histoire naturelle des deux sous-familles et cinq familles d'oiseaux endémiques de Madagascar, comptant actuellement au total 54 espèces. Il est réparti en deux parties dont la première est consacrée aux oiseaux et leurs études historiques en général. Quant à la deuxième partie, elle relate les généralités sur les groupes d'oiseaux endémiques de Madagascar, spécificités écologiques, adaptation sociale, ainsi que les menaces qui pèsent sur leur avenir. Cette partie décrit l'aire de répartition des oiseaux uniques du pays tout en fournissant les informations sur la manière dont ils ont évolué et sur leur caractère unique parmi les splendeurs du patrimoine naturel mondial.

Bref, l'avifaune malgache est particulièrement riche en genres et en espèces qui sont uniques sur l'île et qui n'existent nulle part ailleurs dans le monde. L'objectif du guide est, à cet effet, de fournir des détails sur l'histoire naturelle des groupes d'oiseaux malgaches endémiques au niveau supérieur.

Noro Naina

SCIENTIFIC OUTPUTS OF VAHATRA DURING 2011

Publications from 2011, including submitted manuscripts

Names in **bold** are scientific members of Vahatra and those in *italics* are student members.

Chan, L. M., **S. M. Goodman**, M. Nowak, D. W. Weisrock & A. D. Yoder. 2011. Increased population sampling confirms low genetic divergence among *Pteropus* (Chiroptera: Pteropodidae) fruit bats of Madagascar and other western Indian Ocean islands [Internet]. *PLoS Currents: Tree of Life*. Available from: http://knol.google.com/k/lauren-m-chan/increased-population-sampling-confirms/3gp2mra8dneo9/2.

Cruaud, A., **M. J. Raherilalao**, E. Pasquet & **S. M. Goodman**. 2011. Phylogeography and systematics of the Malagasy rock-thrushes (Muscicapidae, *Monticola*). *Zoologica Scripta*, 40: 554-566.

Dammhahn, M., **V. Soarimalala** & **S. M. Goodman**. in press. Trophic niche differentiation and microhabitat utilization in a species-rich montane forest small mammal community of eastern Madagascar. *Biotropica.*

Fuchs, J., J. L. Parra, **S. M. Goodman**, **M. J. Raherilalao**, J. VanDerWal & R. C. K. Bowie. submitted. Extending species distribution models to the past 120,000 years corroborates the lack of phylogeographic structure in the crested drongo (*Dicrurus forficatus*) from Madagascar. *Biological Journal of the Linnean Society.*

Goodman, S. M. 2011. *Les chauves-souris de Madagascar*. Association Vahatra, Antananarivo, 129 pp.

Goodman, S. M., S. J. Puechmaille, N. Friedli-Weyeneth, J. Gerlach, M. Ruedi, M. Corrie Schoeman, W. T. Stanley & E. C. Teeling. submitted. Phylogeny of the Tribe Emballonurini (Family Emballonuridae) with descriptions of a new genus for Malagasy *Emballonura* and a new species of *Coleura. Journal of Mammalogy*.

Goodman, S. M., M. J. Raherilalao & N. L. Block. 2011. Patterns of morphological and genetic variation in the *Mentocrex kioloides* complex (Aves: Gruiformes: Rallidae) from Madagascar, with the description of a new species. *Zootaxa* 2776: 49–60.

Goodman, S. M., *B. Ramasindrazana*, *C. P. Maminirina*, M. Corrie Schoeman & B. Appleton. 2011. Morphological, bioacoustical, and genetic variation in *Miniopterus* bats from eastern Madagascar, with the description of a new species. *Zootaxa*, 2880: 1-19.

Goodman, S. M., P. J. Taylor, *F. Ratrimomanarivo* & S. Hoofer. in press. The genus *Neoromicia* (Family Vespertilionidae) on Madagascar, with the description of a new species. *Zootaxa*.

Goodman, S. M., *H. H. Zafindranoro* & **V. Soarimalala**. 2011. A case of the sympatric occurrence of *Microgale brevicaudata* and *M. grandidieri* (Afrosoricida, Tenrecidae) in the Beanka Forest, Maintirano. *Malagasy Nature*, 5: 104-108.

Jansen van Vuuren, B., L. Woolaver & **S. M. Goodman**. 2011. Genetic population structure in the boky-boky (Carnivora: Eupleridae), a conservation flagship species in the dry deciduous forests of central western Madagascar. *Animal Conservation* (Bettine, SMG).

Lagadec, E. & **S. M. Goodman**. 2011. An observation of the hairy-eared dwarf lemur, *Allocebus trichotis*, in the Lakato region, eastern Madagascar. *Lemur News* 15: 12-13.

Lagadec, E., Y. Gomard, V. Guernier, H. Pascalis, S. Temmam, *B. Ramasindrazana*, **S. M. Goodman**, P. Tortosa & K. Dellagi. submitted. High infection prevalence and diversity of pathogenic *Leptospira* in bats from the Comoros and Madagascar. *Emerging Infectious Diseases*.

Lamb, J.M., T. M. C. Ralph, T. Naidoo, P. J. Taylor, *F. Ratrimomanarivo,* W. T. Stanley & **S. M. Goodman**. 2011. Toward a molecular phylogeny for the Molossidae (Chiroptera) of Afro-Malagasy region. *Acta Chiropterologica,* 13: 1-16.

Lamb, J.M., T. Naidoo, P. J. Taylor, M. Napier, *F. Ratrimomanarivo* & **S. M. Goodman**. In press. Genetically and geographically isolated lineages of a tropical bat (Chiroptera, Molossidae) show demographic stability over the late Pleistocene. *Biological Journal of the Linnean Society*.

Miralles, A., **A. P. Raselimanana**, **D.** Rakotomalala, M. Vences & D. Vieites. 2011. New large and colorful skink of the genus *Amphiglossus* from Madagascar revealed by morphology and multilocus molecular study. *Zootaxa*, 2918: 47–67.

Newmark, W. D., W. T. Stanley & **S. M. Goodman**. submitted. Is extinction risk for small mammals invariant to spatial scale: A test from Afrotropical fragmented montane forests. *Proceedings of the Royal Society*.

Olive, M.-M., **S. M. Goodman** & J.-M. Reynes. in press. The role of the wild mammals in the maintenance of Rift Valley Fever Virus. *Journal of Wildlife Diseases*.

Omar, H., E. A. S. Adamson, S. Bhassu, **S. M. Goodman, V. Soarimalala**, R. Hashim & M. Ruedi. 2011. Phylogenetic relationships of Malayan and Malagasy pygmy shrews of the genus *Suncus* (Soricomorpha: Soricidae) inferred from

Goodman, S. M., P. J. Taylor, *F. Ratrimomanarivo* & S. Hoofer. in press. The genus *Neoromicia* (Family Vespertilionidae) on Madagascar, with the description of a new species. *Zootaxa*.

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Jansen van Vuuren, B., L. Woolaver & **S. M. Goodman**. 2011. Genetic population structure in the boky-boky (Carnivora: Eupleridae), a conservation flagship species in the dry deciduous forests of central western Madagascar. *Animal Conservation* (Bettine, SMG).

Lagadec, E. & **S. M. Goodman**. 2011. An observation of the hairy-eared dwarf lemur, *Allocebus trichotis*, in the Lakato region, eastern Madagascar. *Lemur News* 15: 12-13.

Lagadec, E., Y. Gomard, V. Guernier, H. Pascalis, S. Temmam, *B. Ramasindrazana*, **S. M. Goodman**, P. Tortosa & K. Dellagi. submitted. High infection prevalence and diversity of pathogenic *Leptospira* in bats from the Comoros and Madagascar. *Emerging Infectious Diseases*.

Lamb, J.M., T. M. C. Ralph, T. Naidoo, P. J. Taylor, *F. Ratrimomanarivo,* W. T. Stanley & **S. M. Goodman**. 2011. Toward a molecular phylogeny for the Molossidae (Chiroptera) of Afro-Malagasy region. *Acta Chiropterologica,* 13: 1-16.

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Newmark, W. D., W. T. Stanley & **S. M. Goodman**. submitted. Is extinction risk for small mammals invariant to spatial scale: A test from Afrotropical fragmented montane forests. *Proceedings of the Royal Society*.

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Omar, H., E. A. S. Adamson, S. Bhassu, **S. M. Goodman, V. Soarimalala**, R. Hashim & M. Ruedi. 2011. Phylogenetic relationships of Malayan and Malagasy pygmy shrews of the genus *Suncus* (Soricomorpha: Soricidae) inferred from mitochondrial cytochrome *b* gene sequences. *The Raffles Bulletin of Zoology*, 59: 237-243**.**

Raherilalao, M.J. & **S. M. Goodman**. 2011. *Histoire naturelle des familles et sous-familles endémiques d'oiseaux de Madagascar*. Association Vahatra, Antananarivo.

Rahola, N., **S. M. Goodman** & V. Robert. 2011. The Hippoboscidae (Insecta, Diptera) from Madagascar, with new records from the "Parc National de Midongy Befotaka". *Parasite*, 18: 127-140.

Rakotoarisoa, J.-E., **S. M. Goodman** & *M. Raheriarisena*. submitted. Evidence for a role of historical factors on the evolution of the endemic rodent *Eliurus carletoni* (Rodentia: Nesomyinae) in an ecological transition zone of northern Madagascar. *Journal of Heredity*.

Rakotondramanana, C. F. & **S. M. Goodman**. 2011. Inventaire de chauves-souris dans la concession forestière de Kirindy CNFEREF, Morondava, Madagascar. *Malagasy Nature*, 5: 109-120.

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Ramasindrazana, B., **S. M. Goodman**, M. C. Schoeman & B. Appleton. 2011. Identification of cryptic species of *Miniopterus* bats (Chiroptera: Miniopteridae) from Madagascar and the Comoros using bioacoustics overlaid on molecular genetic and morphological characters. *Biological Journal of the Linnean Society*, 104: 284-302.

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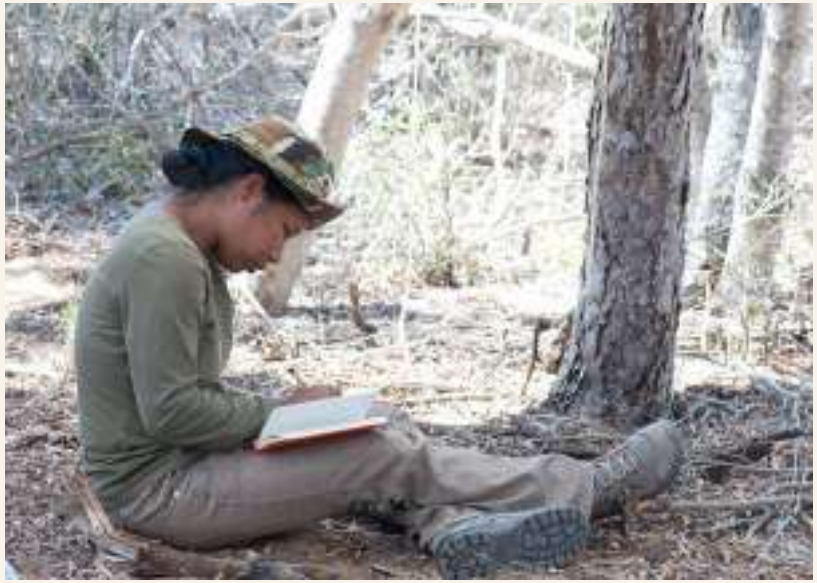
Our goals

- Expand knowledge on biodiversity and natural history of Madagascar.
- Train and supervise future scientists in the field of conservation biology.
- Promote the exchange of scientific information and experience among national and international specialists.
- Strengthen collaboration with institutions and national and international NGOs working in the environmental field.
- Provide expertise and know-how in environmental impact studies and in monitoring the progress of ecological landscapes.
- Support scientifically natural resources managers for Madagascar biodiversity conservation.



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