



REPORT

2011

Treasure Island:

New biodiversity on Madagascar (1999 - 2010)

WWF Madagascar & West Indian Ocean Programme Office

Author: Christian Thompson (the green room)
www.greenroomenvironmental.com, with contributions
from Olivier van Bogaert (WWF-International),
Rick Hughes, Martina Lippuner, Tiana Ramahalco and
Sylvain Rafiadana-Ntsoa (WWF Madagascar &
West Indian Ocean Programme Office)

Design: Torva Thompson (the green room)

Front cover photo: *Furcifer timoni* © Frank Glaw et al
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WWF is one of the world's largest and most experienced
independent conservation organisations, with over
5 million supporters and a global Network active in
more than 100 countries.

WWF's mission is to stop the degradation of the planet's
natural environment and to build a future in which humans
live in harmony with nature, by: conserving the world's
biological diversity, ensuring that the use of renewable natural
resources is sustainable, and promoting the reduction of
pollution and wasteful consumption.

EXECUTIVE SUMMARY

An amazing 615 new species discoveries have been made in the last decade on the island of Madagascar, located off the coast of the African continent in the Indian Ocean. The new finds comprise 385 plants, 42 invertebrates, 17 fish, 69 amphibians, 61 reptiles and 41 mammals.



© Roland Hilgertner

Sahamalaza sportive lemur
(*Lepilemur sahamalazensis*)



Madagascar

Madagascar is the fourth largest island in the world; at 587,000 km² it is comparable to the size of France. Neither African nor Asian despite its proximity to Africa and its Asian influence¹, Madagascar separated from the African continent some 165 million years ago and from the Indian subcontinent 80 to 100 million years ago. This long isolation from neighbouring landmasses has allowed a unique array of plants and animals to evolve, including hundreds of endemics¹¹. These characteristics have led some scientists to dub Madagascar the “eighth continent”¹².

The region boasts four ecoregions, critical landscapes of international biological importance. The eastern part of the island is covered by a narrow band of tropical rainforests that lead to steep hills and central highlands, with volcanic mountains rising to the north in the Tsaratanana Massif. The northwest coast forms a series of natural coves, with broad plains inland, while the southwest region consists of tropical dry forests, plateaus and deserts. Because of the island’s localised red soils, Madagascar has also been called the “Great Red Island”.

The newly discovered species are the latest additions to the already impressive array of biodiversity found in this globally-unique landscape, including a rich assemblage of mammals, birds, amphibians and fishes.

Madagascar is one of the greatest tropical wildernesses left on Earth and home to some of the most spectacular wildlife. The island is home to 5% of the world’s plant and animal species², 250,000 species, of which more than 70% are endemic to Madagascar³. The wildlife of Madagascar includes aye-aye, various species of lemur, radiated tortoises, spider tortoises, marine turtles, flying fox, fossa, fanaloka, mongoose, tenrec, snakes, chameleons, crocodiles and frogs. All 50 known species of lemur are found only on this island⁴. The bird fauna includes some extraordinary bird species, such as the ground-rollers, cuckoo-rollers, and mesites, as well as seriously endangered species such as the Madagascar serpent-eagle (*Eutriorchis astur*, EN) and Madagascar fish-eagle (*Haliaeetus vociferoides*, CR), one of WWF’s flagship species.

Madagascar has more than 5,000km of coastline with over 250 islands, some of the world’s largest coral reef systems, and some of the most extensive mangrove areas in the Western Indian Ocean. These ecosystems provide essential services and livelihoods to the inhabitants of Madagascar. Whales, reef sharks, tuna and five of seven marine turtles in the world – all of which belong to WWF’s priority species – live in Malagasy waters. Of the estimated 14,000 plants native to Madagascar⁵, 90% are found nowhere else in the world⁶, including six species of baobab, or bottle tree.

The habitats of Madagascar continue to face ever-growing threats, including unsustainable resource extraction including small-scale, and widespread clearance of

¹ Settlement of Madagascar happened between 200 and 500 A.D, when seafarers from southeast Asia (probably from Borneo or the southern Celebes) arrived by boat. The Malagasy language shares some 90% of its basic vocabulary with the Ma’anyan language from the region of the Barito River in southern Borneo.

¹¹ Endemic refers to a species that is exclusively native to a specific place and found nowhere else. For example, the kiwi is a bird endemic to New Zealand.

¹² Greater than 1 km from the forest edge.

614 SPECIES DISCOVERED SINCE 1999 ON MADAGASCAR

habitats, primarily for firewood and charcoal production. Secondary threats are caused by subsistence agriculture, livestock grazing, and invasive species. Analysis of aerial photographs indicates that forest cover decreased by almost 40% from the 1950s to c. 2000, with a reduction in 'core forest'^{III} of almost 80%. During the rainy season Madagascar seems to be bleeding. Every year, millions of tons of laterite are washed away by streams and rivers from the highlands that are suffering from erosion as a result of deforestation. The sediments then smother the sensitive reefs of the Indian Ocean and the Mozambique Channel. This forest destruction and degradation threaten thousands of species with extinction⁷. Experts now predict that Madagascar has already lost 90 per cent of its original forest cover⁸.

For the unique species of the island, loss of vital habitat is a disaster and the increased access to species has also exacerbated the international trade in Madagascar's wildlife. Today, many animals and plants are threatened, with rosewood, tortoises, chameleons, geckos and snakes, the most targeted by traffickers. Since 1995, only 4 Madagascar chameleon species are permitted to be exported from Madagascar and this moratorium is still in place today. Despite this, smugglers continue to flout the law.

Despite Madagascar's rich biodiversity, it is one of the world's poorest nations. Poverty and the environment are inextricably linked, with the environmental degradation in Madagascar threatening the livelihoods of Madagascar's 20million inhabitants.

WWF has been active on the island for 47 years, working with local communities to protect Madagascar's unique biodiversity.

WWF seeks to conserve and sustainably manage the biodiversity and ecosystems in Madagascar and the Western Indian Ocean (WIO) region by 2050. Through appropriate legal and political frameworks at local, regional and national level, and by prioritizing sustainable livelihoods, WWF aims to promote the whole region as a model for conservation of key ecosystems, habitats and species already by 2025.



© Mark Creten

Calumma tarzan, a new chameleon species described in 2010. Scientists dedicated the species to the fictional forest man "Tarzan" in the hope that this famous name will promote awareness and conservation of this highly threatened new species and its habitats.

WWF's conservation strategy for the upcoming five years (2011-2015) is organised under three priority approaches and seven objectives:

1 Conserving biodiversity

Objective 1: Priority terrestrial and marine landscapes

Activities focus on ten landscapes representative of the local biodiversity. They include the protection of biodiversity, especially by supporting Madagascar's National Parks System; the sustainable management of natural resources, particularly through community management and promotion of improved agricultural practices; and the restoration of natural resources through involvement of local stakeholders and partners. The goal is to link conservation with the improvement of local people's livelihoods.

Objective 2: Endemic species and migratory marine species

By improving the knowledge on endangered species such as Madagascar's tortoises and marine turtles, and ensuring that appropriate management measures are put in place, WWF aims to ensure better enforcement of the Convention on International Trade of Endangered Species of flora and fauna (CITES).

2 Promoting sustainable use

Objective 3: Sustainable fishing

Coastal and marine ecosystems of the WIO region are home to a very rich biodiversity and play a key role for the local – and global – economy and culture (tuna fishing is a good example). To promote sustainable fishing, WWF is building the local stakeholders' capacities to manage traditional and artisanal fishing, and help the islands' authorities manage tuna fishing. WWF also supports a model of sustainable shrimp ecobusiness.

Objective 4: Sustainable energy

Together with key actors of the Atsimo Andrefana region, in the south west of Madagascar, WWF is implementing a management plan for sustainable fuel wood. The conservation organization is also running pilot projects to show that energy efficiency and renewable energy sources are ecologically and economically pertinent, in accordance with its global policy on mitigating the effects of climate change.



© Axel Strauß

Boophis liliana male and female in amplexus. The species was newly described in 2008.

3 Creating the appropriate conditions

Objective 5: Integrate conservation into sectoral policies

Extractive industries, land use planning, biofuels and energy are the main sectors where WWF is active to promote policies which fully integrate environmental aspects and good practices within industrial companies, and ensure net environmental and social gains for local people.

Objective 6: Implement sound environmental governance

Responsible participation of key actors in all sectors is needed to implement sound environmental governance. In 2011-2015, WWF will continue to work closely with its partners at the State level. WWF will also build capacities in the civil society and local organizations through environmental education and information.

Objective 7: Adapt to climate change

In Madagascar and WIO islands, communities living close to natural resources already feel the effects of climate change in their daily life. To ensure a better understanding of this phenomenon, protect the people and ecosystems and develop effective adaptation measures, WWF is providing specific training and information to the region's stakeholders.

In addition, *The Holistic Conservation Programme for Forests in Madagascar*, a four-year innovative and large-scale project funded by the French Foundation GoodPlanet - with Air France as sole sponsor - and implemented in the field by WWF, aims to Reduce greenhouse gases Emissions from Reducing Deforestation and Degradation of forests (REDD) in Madagascar.

With greater protection and management will come a viable future for people and nature.

Such is the uniqueness of the remarkable species and habitats on Madagascar that even today hundreds of new species continue to be newly discovered, having never before been encountered.

TREASURE ISLAND

The significance of the flora and fauna of Madagascar is not only their diversity, but also their remarkable endemism. The high level of species unique to Madagascar resulted from tens of millions of years of isolation from the African mainland and from people, who only arrived 2,000 years ago. The islands have an astounding eight plant families, five bird families, and five primate families that live nowhere else on Earth.

Madagascar and the Indian Ocean Islands Diversity and Endemism

Taxonomic Group	Species	Endemic Species	Percent Endemism
Plants	13,000	11,600	89
Mammals	155	144	92
Birds	310	181	58
Reptiles	384	367	95
Amphibians	235	229	99
Freshwater fish	164	97	59
Invertebrates	5,800	4,988	86

Sources: Conservation International, 2000. Ecosystem Profile: Madagascar Ecosystem of the Madagascar & Indian Ocean Islands Biodiversity Hotspot; Goodman, SM, and Benstead, JP. (Eds.). 2003. The Natural History of Madagascar. Chicago: University of Chicago Press; Andreone F. (Editor), 2008. A Conservation Strategy for the Amphibians of Madagascar - Monografie XLV. Museo Regionale di Scienze Naturali, Torino.

NEW WONDERS FROM THE “EIGHTH CONTINENT”

A closer look at the new species...

A simply staggering number of new lemur species have been described from Madagascar over the past 11 years. In total, 28 new lemur species join the ranks of the island’s known mammals. Many of these endemic new species have been recently described as new based largely on increased sampling efforts and more rigorous DNA analysis.

Among the list of new lemurs are new species of mouse lemurs, the world’s tiniest primates. For example Berthe’s Mouse Lemur (*Microcebus berthae*), discovered in 2000, is the smallest of the mouse lemurs and the smallest

The land of lemurs

in the world with an average body length of 92 millimetres (3.6 in) and weight of around 30g, it is found in the Kirindy Mitea National Park in Western Madagascar. In 1992 there were only two known mouse lemur species. This number has since jumped to 15 thanks to the dedication of scientists with at least nine discovered in the last decade. There is also incredible diversity among single species: one study by scientists examined 70 mouse lemurs with varying coat colours and from different types of forest locations and revealed that they were in fact all the same species⁹.

The name lemur comes from the Latin word lemures, which means ‘spirits of the night’ or ‘ghosts’. Ironically, today all lemurs are in danger of vanishing, such is the extent of forest loss on the island. 17 lemur species became extinct after the arrival of the human settlers to the island approximately 2,000 years ago^{10,11,12}.

Lemur taxonomy is controversial, and not all experts agree, particularly with the recent increase in the number of recognized species^{13,14,15}. According to some experts there are currently 99 recognised species or subspecies of living lemur, divided into five families and 15 genera¹⁶. In contrast, other experts have labeled this as ‘taxonomic inflation’¹⁷, instead preferring a total closer to 50 species¹⁸.

Of the 50 various species of lemurs, 6 are critically endangered, 17 are endangered and 14 are considered vulnerable¹⁹. 5 lemur species are among the 25 most threatened primate in the world: *Prolemur simus*, *Propithecus candidus*, *Eulemur cinereiceps*, *Lepilemur septentrionalis*, *Eulemur flavifrons*²⁰.

Among the other new mammal finds are seven bats, three rodents and three threatened shrews: *Microgale jenkinsae* (EN), *Microgale jobihely* (EN) and *Microgale nasoloi* (VU).



© Nicole Andriaholinirina

Randriansoli’s sportive lemur (*Lepilemur randriansoli*)



© Thomas Hahn

Sahamalaza sportive lemur (*Lepilemur sahamalazensis*)

The global importance of Madagascar’s lemurs

According to renowned primatologist, herpetologist and biological anthropologist Russell A. Mittermeier in *The Eighth Continent*, although Madagascar "is only one of 92 countries with wild primate populations, it is alone responsible for 21 percent (14 of 65) of all primate genera and 36 percent (five of 14) of all primate families, making it the single highest priority" for primate conservation. "Madagascar is so important for primates that primatologists divide the world into four major regions: the whole of South and Central America, all of southern and southeast Asia, mainland Africa, and Madagascar, which ranks as a full-fledged region all by itself."

Source: Tyson, Peter and Russell A. Mittermeier. *The Eighth Continent: Life, Death, and Discovery in the Lost World of Madagascar*. Morrow, William & Co, 2000.



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NEW MAMMALS HAVE
BEEN DISCOVERED ON
MADAGASCAR SINCE 1999

Antafia sportive lemur (*Lepilemur aeeclis*)

© Urs Thalmann

A gecko that thinks it's a tree

(UROPLATUS PIETSCHMANNI)

It's easy to see why this species eluded scientists until now. The amazing Cork Bark Leaf-Tailed Gecko (*Uroplatus pietschmanni*) was discovered in 2003 by scientists in the east coast rainforest of Madagascar, in Toamasina province, at an altitude of some 1000m²¹. The 13cm-long species likes to climb thick branches, corkbark, and sturdy broadleaved plants, and has perfect camouflage. *U. pietschmanni* is much less common than most other varieties and little is known about its range and distribution in its natural habitat, although scientists believe the species is endemic to Amboasary Gara in central East-Madagascar.

All leaf-tailed geckos except *U. lineatus* are limited to primary, undisturbed rainforests and therefore are especially prone to habitat destruction. As of 2004 the genus *Uroplatus* has in its entirety been placed on Appendix 2 of CITES (Convention for International Trade in Endangered Species); this makes it the most heavily protected gecko genus by international law. The species has made its way into the pet trade in limited numbers, because their unique camouflage make them attractive display animals. On average, nearly 100 have been exported annually for trade purposes since 2004²², with 262 being exported in the peak year of 2005²³.



Uroplatus pietschmanni



Uroplatus pietschmanni

61
NEW REPTILES HAVE
BEEN DISCOVERED ON
MADAGASCAR SINCE 1999

An uber orb-weaver (NEPHILA KOMACI)

Komac's golden orb spider (*Nephila komaci*) described from Madagascar in 2009 is one of the largest web spinning species known²⁴. *Nephila* are renowned for being the largest web-spinning spiders, making huge webs of golden silk, often greater than 1m in diameter. It is the first species of *Nephila* to be described since 1879 and it is the largest *Nephila* to date. Orb-weaving spiders exhibit extreme sexual size dimorphism: a female of the new species has a body length of 39.7mm and a male has a body length of 8.7mm! The females large size helps it avoid being eaten by predators.

Although the web of this new species has not been seen, it is likely to be the largest. More than 41,000 spider species are known with about 400–500 added each year, but new giant golden orb-weavers are extremely rare. Only three specimens of the new species have been found in the past decade.

Scientists recently also reported the discovery of the largest ever spider webs made by a new species of *Caerostris* spider, which is currently being formally described by experts²⁵.

Madagascar has 459 species of spider, with 390 (84%) being endemic to the island²⁶.

Although often perceived as insignificant, invertebrates play very important roles in ecology, such as in nutrient recycling, soil formation and quality, and as food for many predators. They are therefore essential to all animal life on Madagascar.



© Matjaz Kummer

This photo shows the extreme difference in size of female and male orb-weaving spiders (*Nephila pilipes* shown)



© Matjaz Kummer

This photo shows a giant golden orb-web exceeding 1 metre in diameter

42
NEW INVERTEBRATES HAVE
BEEN DISCOVERED ON
MADAGASCAR SINCE 1999

A rhapsody of colours from Madagascar

(LIOPHIDIUM PATTONI)

This exceptionally-coloured new snake species was discovered in 2010 at the western side of the Makira plateau, within the newly created Makira National Park, province of Mahajanga, in the North East of Madagascar²⁷. Originally found at 1,009m above sea level, *Liophidium pattoni* can be easily distinguished from all other *Liophidium* species and any other species of Madagascar snakes by its unique colour pattern. The 41cm-long species has an overall black dorsal side with four pink-red horizontal stripes, fading into blue-grey. In addition, the snake has a bright yellow underbelly.

The snake is known to eat lizards and hunts through the rainforest searching for small ground-living animals.

Despite being found in a protected area, the area of rainforest the species was found in had been recently fragmented due to human activities. Two further specimens were discovered in Masoala National Park, a UNESCO World Heritage Site. Both Masoala and Makira National Park's are currently experiencing an upsurge in illegal logging for precious rosewood destined for markets in China²⁸.

Scientists believe the species may be widespread throughout the eastern coast of Madagascar, spanning a wide altitudinal range from sea-level to 1,100m in the Makira Plateau, and occurring in very different environments from warm lowlands to relatively cool mountain rainforests.

The species is one of 61 reptiles discovered over the last 11 years.



Liophidium pattoni



Liophidium pattoni

A
self-destructive
palm tree
(TAHINA SPECTABILIS)

An extraordinary 385 new plant species, spanning a broad range of families, have been discovered on Madagascar since 1999. This number includes 39 new Aloe species of flowering succulent plants, 10 new species from the pepper family, six new species of coffee and eight new palm trees.

Undoubtedly the most exciting discovery in the world of palms in the new millennium is the Tahina Palm (*Tahina spectabilis*), described in 2008, and found quite by accident by a cashew-grower, Xavier Metz²⁹. This magnificent and massive fan palm flowers only once in its life, with a totally spectacular, giant, whitish inflorescence that forms from the centre of the crown. After fruiting, the palm dies and collapses.

The new genus is unrelated to any other of the 170 plus palms of Madagascar and is most closely related to three genera in south and south-east Asia.

This species and genus of palm numbers fewer than 100 individuals found only in Analalava district, a small area of northwestern Madagascar, where it grows in low, seasonally dry forest or scrubland that may be flooded during the rainy season, at the foot of heavily eroded limestone hills.

The palm is very rare and efforts with the aim to protect its natural habitat have been initiated and are now managed by discoverers Xavier Metz and John Dransfield. Soon after the publication of the species, seeds were disseminated throughout the palm grower community, raising money for its conservation by the local villagers, and it has become a highly prized ornamental plant. Any profits resulting from the sale of the seeds distributed under this conservation programme will go to their community. The funds are destined towards village development, such as a pump for the village well, and aim at keeping cattle and fire away from the palms.



385
NEW PLANTS HAVE
BEEN DISCOVERED ON
MADAGASCAR SINCE 1999

Tahina spectabilis © John Dransfield

A remarkable colour-changing lizard

(PHELSUMA BORAI)

In 2009, scientists discovered a new species of gecko with some remarkable transforming abilities³⁰. The new species, known from a single specimen, has a greyish-brown ground colouration resembling the bark of trees, which scientists believe provides the species with effective camouflage to escape from birds and other predators and is perhaps one reason why the species has not been discovered earlier. However, *Phelsuma borai* can quickly change its colour, which in this extent is unusual for the *Phelsuma* genus and allows the species to switch from a subtle brown to a colourful bright blue during courtship.

The species was discovered during a survey in the Tsingy de Bemaraha National Park, a deciduous dry forest on a karstic limestone massif in western Madagascar. This bizarre limestone massif with steep slopes and sharp needle-like peaks has revealed a remarkable number of new species of amphibians and reptiles in recent years and its herpetofauna is still far from being sufficiently known according to scientists.

There are currently 27 recognised *Phelsuma* species in Madagascar³¹.



© Frank Glaw

Phelsuma borai



© Frank Glaw

Phelsuma borai

A new threatened species of edible yam

(DIOSCOREA ORANGEANA)

Dioscorea orangeana, newly described in 2009, is a threatened species of edible yam from northern Madagascar³². Its appearance is uncharacteristic of Madagascar yams in that the species has several lobes instead of just one, making the species look like udders on a cow.

Like all the edible yams known from the Antsiranana region, favoured species are heavily exploited. The conservation and sustainable use of *D. orangeana* are matters of concern, because its distribution is restricted to such a small area - 1.7 km² of deciduous forest, on sand, up to 100m above sea level. Scientists are now urgently looking for *D. orangeana* in similar forests in the far north of Madagascar, which is botanically poorly explored.

In the meantime, the authors suggest that *D. orangeana* should be Red Listed as Critically Endangered, since it is heavily harvested and growing in the Forêt d'Orangea near Diego Suarez, an unprotected habitat. The nearest protected area is at least 20km away. *D. orangeana* was named by Kew botanist Paul Wilkin with colleagues from France and Madagascar, the scientific name referring to the forest in which it occurs (Forêt d'Orangea).



© Claude Marcel Hladik

Dioscorea orangeana

A 'Glam rock' chameleon

(FURCIFER TIMONI)

Intensive herpetological fieldwork and taxonomic revisions during the past 15 years have led to a strong increase in the number of chameleon species. During recent field work scientists discovered a colourful and highly distinct species of chameleon, *Furcifer timoni*, in the isolated rainforests of the Montagne d'Ambre massif 850m above sea level, in northern Madagascar³³.

Officially described in 2009, both males and females of the species are very striking, appearing to sport vibrant 'glam rock' make-up. According to scientists, the discovery of this distinctive new *Furcifer* species was very surprising since this area has been repeatedly and intensively surveyed for reptiles over many years.

In total, 11 new chameleon species have been described since 1999.



Furcifer timoni (female)



Furcifer timoni (male)

Bright yellow frog with 'measles'

(BOOPHIS BOTTAE)

The new frog species, *Boophis bottae*, occurs in the eastern rainforest belt of Madagascar from Andasibe south to Ranomafana, at 800-1,000m above sea level³⁴. The species lives along streams, and also at the edge of rainforest, where it was originally found near a bridge on the road between the National Road 2 and the Andasibe village, central-eastern Madagascar. This endemic species is already threatened by habitat loss and is declining due to destruction of its forest habitat due to subsistence agriculture, timber extraction, charcoal manufacture, invasive spread of eucalyptus, livestock grazing, and expanding human settlements.

The species is one of 69 amphibians discovered over the last 11 years.

The global importance of Madagascar's amphibian species is paramount especially because of the group's extreme diversity on the island. A recent study based on DNA sequences of 2,850 specimens sampled from over 170 localities, revealed that there are twice as many amphibian species than previously thought - from the currently described 244 species to a minimum of 373, but possibly as many as 465³⁵. Amphibians are in decline worldwide and on Madagascar the results of the survey suggests that current habitat destruction may be affecting more species than previously thought.

Scientists are now stressing the need for integrated taxonomic surveys as a basis for prioritising conservation efforts within Madagascar.



© Axel Strauß

Boophis bottae



© Axel Strauß

Boophis bottae

69
NEW AMPHIBIANS HAVE
BEEN DISCOVERED ON
MADAGASCAR SINCE 1999

A blue-lipped fish

(PARETROPLUS TSIMOLY)

The new fish species, Lamena “blue lips” (*Paretroplus tsimoly*), was described by scientists in 2001³⁶. Measuring 25cm in length, the species is extraordinary in that mature individuals of the species possess prominent blue lips. The native name for the fish is Lamena, which means “red one” in the local Malagasy dialect, on account of the bright red fins and edging on the eyes. The body of this species is brilliant golden orange.

The species is a rheophilic cichlid, whose natural habitat is the fast flowing rapids within these rivers, as well as isolated pools with rocky bottoms, interspersed with patches of cobble and coarse gravel.

The species was originally known from the Akalimotra and Boinakely rivers, but additional populations have recently been found in the Kamoro river basin³⁷.

17 new fish species have been discovered by scientists in the last 11 years.



© Philippe Burnel

Paretroplus tsimoly



© Jeff Dubose

Paretroplus tsimoly

17
NEW FISH HAVE
BEEN DISCOVERED ON
MADAGASCAR SINCE 1999

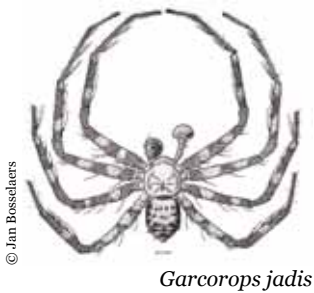
Frozen in time

(GARCOROPS JADIS)

A new species of spider known only from a beached piece of copal of uncertain origins and age, was found in the vicinity of Sambava, North-East Madagascar, and officially described in 2004³⁸. One large male spider, *Garcorops jadis*, was found in copal, a hardened, subfossil diterpenoid resin estimated by different authors to be between a few hundred and four million years old.

The species is named after Jadis, the Ice Queen from C.S. Lewis' youth novel "The Lion, the Witch and the Wardrobe" because the beautiful specimen seems enclosed in ice, frozen in time forever.

The discovery has baffled scientists who are unable to ascertain whether *Garcorop jadis* may be an existing species not yet discovered in its natural habitat or long extinct species.



Garcorops jadis

A radiant orchid

(POLYSTACHYA CLAREAE)

Among the hundreds of new plants species are 12 new orchid species. One particularly attractive species is *Polystachya clareae*, or Clare's Polystachya, a bright orange orchid described in 2003 from Manjakandriana in Madagascar's Antananarivo province, at 850m above sea level³⁹. Found in humid evergreen rainforest, the species has bright green leaves and when it blooms in Summer many bright orange flowers appear in clusters on three branches. The species apparently has a scent reminiscent of "artificial citrus sweets".



© Eric Hunt

Polystachya clareae



Antananarivo province, home to Madagascar's capital city and a number of new species discoveries, including the new orchid *Polystachya clareae*

GREENING THE GREAT RED ISLAND

Madagascar has evolved remarkably diverse ecosystems including lush tropical rainforests, mountain peaks, tropical dry forests, near-desert environments, mangrove forests, and coral reefs – together supporting 5% of all plant and animal species known to man.

Today, international economic forces, a growing global demand for natural resources, and widespread regional poverty are putting the species, forests, freshwater and marine ecosystems of this globally outstanding region at risk. Approximately 200,000 to 300,000 hectares of natural forest are cleared each year, mostly due to clearance for agriculture, cattle grazing and firewood, but poorly-planned economic development projects and extensive mining are also responsible. The result is that less than 10% of Madagascar's original forest cover now remains⁴⁰. Several factors have contributed to deforestation: rapid population growth, an increasing impoverishment of the local population, its need to increase food production and a rising demand for wood for domestic energy. For their domestic energy needs, almost 95% of Malagasy households use firewood and charcoal. Also, there are logging requirements for timber and construction. In the highlands, deep gashes caused by deforestation are leaving the land bare in many places. Local timber barons are also harvesting scarce species of rosewood and other precious wood trees and exporting the wood to China. The wood is used to make furniture and musical instruments. Most of the wood is being removed illegally from national parks in Madagascar and in the last year the trade has increased 25 fold to the value of USD220million⁴¹.

As Madagascar's forests continue to be cut, all that remains is a red trail that runs down the rivers into the sea. Soil erosion is leaving the land naked and unfit for agriculture. Downstream, increased sediment loads are silting estuaries and smothering sensitive marine habitats. As a result, marine species lose their home, and communities lose their source of income. And silted reefs are more vulnerable to climate change.

These threats place an untold number species at risk of extinction – not just the ones that have been newly discovered, but symbolic and charismatic species for which Madagascar is known the world over. Many animals and plants are also threatened with excessive hunting, killing off the island's emblematic species, including the lemur and terrestrial tortoises. It is estimated that 60,000 tortoises are collected from the wild every year to feed the pet trade in South East Asia, Japan and Europe⁴². The freshwater fishes of Madagascar are considered the island's most endangered vertebrates. An IUCN assessment of 98 endemic freshwater fish species found that 54% of the fish were either Critically Endangered, Endangered or Vulnerable⁴³.

Habitat degradation, siltation, temperature increases, agriculture and overfishing are considered the main causes of species decline. Introduced fish species have already replaced many native species in inland lakes and streams. Trade for pets and plants have weakened populations of endemic animals and vegetation, especially amphibians, reptiles and succulent plants. According to WWF studies in North Eastern and Western Madagascar, rosewood is now on the brink of local extinction because of increased illegal exploitation.

WWF has been active on the island for 47 years, working with local communities to protect Madagascar's unique environment.

WWF seeks to conserve and sustainably manage the biodiversity and ecosystems in Madagascar and the Western Indian Ocean (WIO) region by 2050. Through appropriate legal and political frameworks at local, regional and national level, and by prioritizing sustainable livelihoods, WWF aims to promote the whole region as a model for conservation of key ecosystems, habitats and species already by 2025.

WWF's conservation strategy for the upcoming five years (2011-2015) is organized under three priority approaches and seven objectives:

1 Conserving biodiversity

Objective 1: Priority terrestrial and marine landscapes

Activities focus on ten landscapes representative of the local biodiversity. They include the protection of biodiversity, especially by supporting Madagascar's National Parks System; the sustainable management of natural resources, particularly through community management and promotion of improved agricultural practices; and the restoration of natural resources through involvement of local stakeholders and partners. The goal is to link conservation with the improvement of local people's livelihoods.

Objective 2: Endemic species and migratory marine species

By improving the knowledge on endangered species such as Madagascar's tortoises and marine turtles, and ensuring that appropriate management measures are put in place, WWF aims to ensure better enforcement of the Convention on International Trade of Endangered Species of flora and fauna (CITES).

2 Promoting sustainable use

Objective 3: Sustainable fishing

Coastal and marine ecosystems of the WIO region are home to a very rich biodiversity and play a key role for the local – and global – economy and culture (tuna fishing is a good example). To promote sustainable fishing, WWF is building the local stakeholders' capacities to manage traditional and artisanal fishing, and help the islands' authorities manage tuna fishing. WWF also supports a model of sustainable shrimp ecobusiness.

Objective 4: Sustainable energy

Together with key actors of the Atsimo Andrefana region, in the south west of Madagascar, WWF is implementing a management plan for sustainable fuel wood. The conservation organization is also running pilot projects to show that energy efficiency and renewable energy sources are ecologically and economically pertinent, in accordance with its global policy on mitigating the effects of climate change.

3 Creating the appropriate conditions

Objective 5: Integrate conservation into sectoral policies

Extractive industries, land use planning, biofuels and energy are the main sectors where WWF is active to promote policies which fully integrate environmental aspects and good practices within industrial companies, and ensure net environmental and social gains for local people.

Objective 6: Implement sound environmental governance

Responsible participation of key actors in all sectors is needed to implement sound environmental governance. In 2011-2015, WWF will continue to work closely with its partners at the State level. WWF will also build capacities in the civil society and local organisations through environmental education and information.

Objective 7: Adapt to climate change

In Madagascar and WIO islands, communities living close to natural resources already feel the effects of climate change in their daily life. To ensure a better understanding of this phenomenon, protect the people and ecosystems and develop effective adaptation measures, WWF is providing specific training and information to the region's stakeholders.

In addition, *The Holistic Conservation Programme for Forests in Madagascar*, a four-year innovative and large-scale project funded by the French Foundation GoodPlanet - with Air France as sole sponsor - and implemented in the field by WWF, aims to Reduce greenhouse gases Emissions from Reducing Deforestation and Degradation of forests (REDD) in Madagascar.

The project boundary covers an area of more than 500,000 ha of moist and dry forests. By March 2012, it will help to achieve the following objectives:

Improve knowledge on effective and verifiable measure of the impact of field activities to reduce greenhouse gas emissions and, to a lesser extent, sequester CO₂ already present in the atmosphere.

Improve the living conditions of local communities through the transfer of natural resource management and development of sustainable agricultural practices (system of rice intensification, fish farming, bee keeping, small-scale breeding, etc.)

Fully integrate the conservation of the unique biodiversity of Madagascar. Successfully placing the region on a sustainable development path will require the commitment and the increased capacity of governments, industry and local communities alike to protect and sustainably manage one of the world's most outstanding forest, freshwater and marine landscapes.

With protection and management comes a viable future for the people and species that live there.

For more information:

www.wwf.org

www.panda.org/what_we_do/where_we_work/madagascar/

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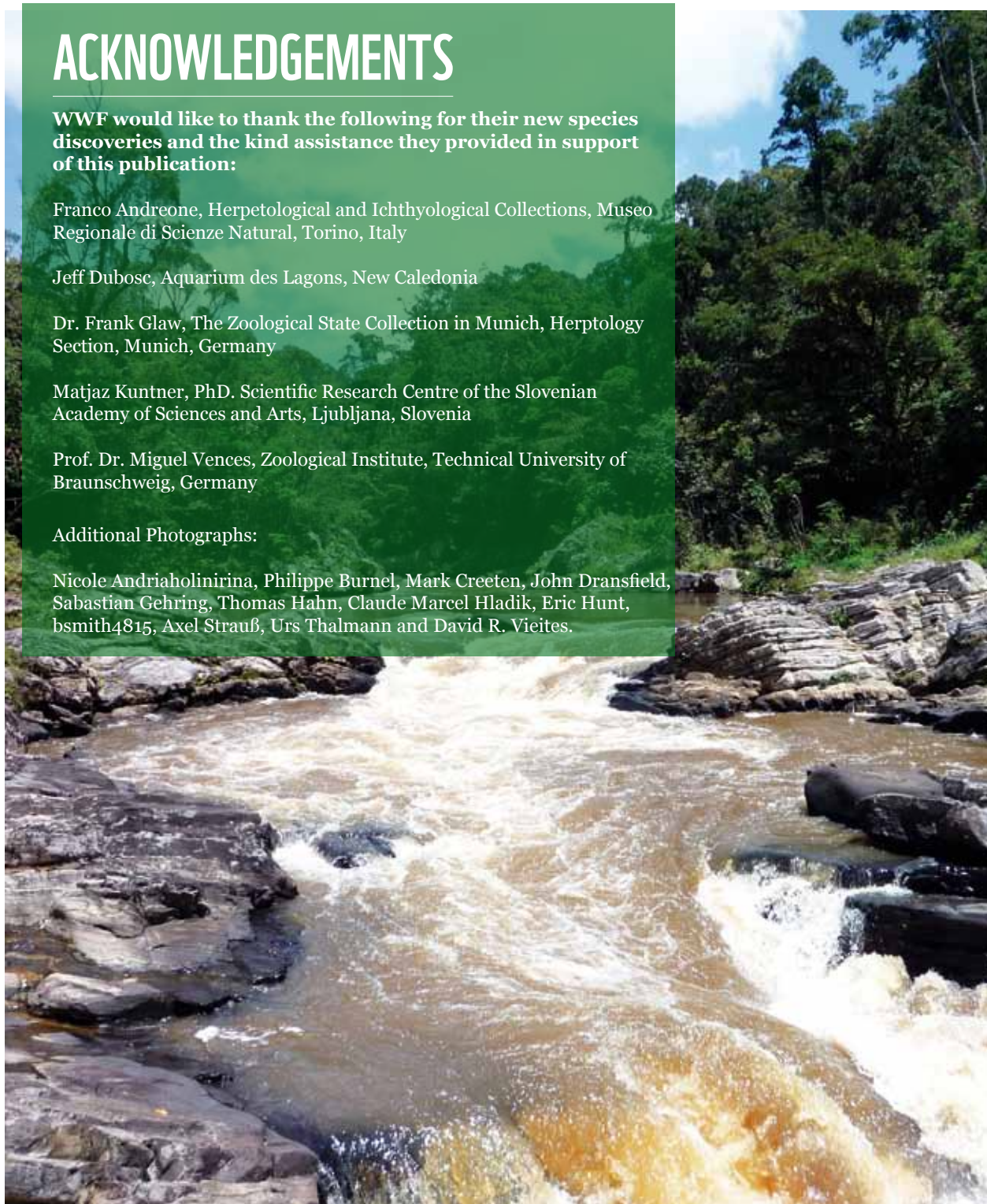
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APPENDIX

Madagascar new species 1999 - 2010

Plants

Species	Scientist(s)	Year	Species	Scientist(s)	Year
<i>Aloe albostrata</i>	T.A.McCoy, Rakouth & Lavranos	2008	<i>Brexia alaticarpa</i>	G.E.Schatz & Lowry	2004
<i>Aloe altimatsiatrae</i>	J.-B.Castillon	2008	<i>Brexia australis</i>	G.E.Schatz & Lowry	2004
<i>Aloe ambositrae</i>	J.-P.Castillon	2008	<i>Brexia marioniae</i>	G.E.Schatz & Lowry	2004
<i>Aloe ambrensis</i>	J.-B.Castillon	2007	<i>Bulbophyllum ambatoavense</i>	Bosser	2004
<i>Aloe ampefyana</i>	J.-B.Castillon	2007	<i>Bulbophyllum jackyi</i>	G.A.Fisch., Sieder & P.J.Cribb	2007
<i>Aloe andohahelensis</i>	J.-B.Castillon	2002	<i>Bulbophyllum labatii</i>	Bosser	2004
<i>Aloe antonii</i>	J.-B.Castillon	2006	<i>Bulbophyllum petrae</i>	G.A.Fisch., Sieder & P.J.Cribb	2007
<i>Aloe argyrostachys</i>	Lavranos, Rakouth & T.A.McCoy	2007	<i>Buxus cipolinica</i>	Lowry & G.E.Schatz	2006
<i>Aloe aurelienii</i>	J.-B.Castillon	2008	<i>Cadia multifoliolata</i>	Nusb. & Labat	2008
<i>Aloe bruynsii</i>	P.I.Forst.	2003	<i>Calyptanthera filifera</i>	Klack.	2007
<i>Aloe castilloniae</i>	J.-B.Castillon	2006	<i>Calyptanthera sulphurea</i>	Klack.	2007
<i>Aloe charlotteae</i>	J.-B.Castillon	2006	<i>Calyptanthera villosa</i>	Klack.	2007
<i>Aloe darainensis</i>	J.-P.Castillon	2009	<i>Camptosperma zacharyi</i>	Randrian. & Lowry	2004
<i>Aloe deinacantha</i>	T.A.McCoy, Rakouth & Lavranos	2008	<i>Celtis madagascariensis</i>	Sattarian	2005
<i>Aloe droseroides</i>	Lavranos & T.A.McCoy	2003	<i>Cissus zombitsy</i>	Desc.	2007
<i>Aloe edouardii</i>	Rebmann	2008	<i>Cloiselia humbertii</i>	S.Ortiz	2006
<i>Aloe estevei</i>	Rebmann	2008	<i>Cloiselia madagascariensis</i>	S.Ortiz	2006
<i>Aloe eximia</i>	Lavranos & T.A.McCoy	2006	<i>Coffea bissetiae</i>	A.P.Davis & Rakotonas.	2008
<i>Aloe florenceae</i>	Lavranos & T.A.McCoy	2004	<i>Coffea boinensis</i>	A.P.Davis & Rakotonas.	2008
<i>Aloe ifanadianae</i>	J.-B.Castillon	2008	<i>Coffea labatii</i>	A.P.Davis & Rakotonas.	2008
<i>Aloe inexpectata</i>	Lavranos & T.A.McCoy	2003	<i>Coffea namorokensis</i>	A.P.Davis & Rakotonas.	2008
<i>Aloe johannis</i>	J.-B.Castillon	2006	<i>Coffea pterocarpa</i>	A.P.Davis & Rakotonas.	2008
<i>Aloe johannis-bernardii</i>	J.-P.Castillon	2008	<i>Coffea toshii</i>	A.P.Davis & Rakotonas.	2010
<i>Aloe johannis-philippei</i>	J.-B.Castillon	2009	<i>Colea gentryi</i>	Zijhra	2006
<i>Aloe makayana</i>	Lavranos, Rakouth & T.A.McCoy	2008	<i>Colea resupinata</i>	Zijhra	2006
<i>Aloe manandonae</i>	J.-B.Castillon & J.-P.Castillon	2008	<i>Colea rosea</i>	Zijhra	2006
<i>Aloe mandotoensis</i>	J.-B.Castillon	2003	<i>Colea sytsmae</i>	Zijhra	2006
<i>Aloe mitsioana</i>	J.-B.Castillon	2006	<i>Commelina lukei</i>	Faden	2008
<i>Aloe pachydactylos</i>	T.A.McCoy & Lavranos	2007	<i>Commiphora capuronii</i>	Bard.	2002
<i>Aloe philippei</i>	J.-B.Castillon	2005	<i>Coptosperma mitochondrioides</i>	Mouly & De Block	2008
<i>Aloe pseudoparvula</i>	J.-B.Castillon	2004	<i>Crassula ankaratrensis</i>	Desc.	2007
<i>Aloe richaudii</i>	Rebmann	2008	<i>Crassula bevilanensis</i>	Desc.	2007
<i>Aloe rodolphi</i>	J.-B.Castillon	2008	<i>Crinum hanitrae</i>	Lehmiller & Sisk	2008
<i>Aloe roeoeslii</i>	Lavranos & T.A.McCoy	2005	<i>Crinum lavrani</i>	Lehmiller	2007
<i>Aloe sakarahensis</i>	Lavranos & M.Teissier	2004	<i>Cryptocarya glabriflora</i>	van der Werff	2008
<i>Aloe saronarae</i>	Lavranos & T.A.McCoy	2006	<i>Cyathea basiotundata</i>	Rakotondr. & Janssen	2008
<i>Aloe tulaeensis</i>	T.A.McCoy & Lavranos	2007	<i>Cyathea conferta</i>	Janssen & Rakotondr.	2008
<i>Aloe wernerii</i>	J.-B.Castillon	2007	<i>Cyathea dilatata</i>	Rakotondr. & Janssen	2008
<i>Aloe zakamisyi</i>	T.A.McCoy & Lavranos	2007	<i>Cyathea emilei</i>	Janssen & Rakotondr.	2008
<i>Amorphophallus mangelsdorffii</i>	Bogner	2003	<i>Cyathea hebes</i>	Janssen & Rakotondr.	2008
<i>Amphistemon humbertii</i>	Groeninckx	2010	<i>Cyathea impolita</i>	Rakotondr. & Janssen	2007
<i>Amphistemon rakotonasolianus</i>	Groeninckx	2010	<i>Cyathea lisyae</i>	Janssen & Rakotondr.	2008
<i>Angraecum oeonoides</i>	Bosser	2007	<i>Cyathea longispina</i>	Janssen & Rakotondr.	2008
<i>Anisotes divaricatus</i>	T.F.Daniel, Mbola, Almeda & Phillipson	2007	<i>Cyathea meridionalis</i>	Janssen & Rakotondr.	2008
<i>Apodytes bebile</i>	Labat, R.Rabev. & El-Achkar	2006	<i>Cyathea obtecta</i>	Rakotondr. & Janssen	2008
<i>Aponogeton eggersii</i>	Bogner & H.Bruggen	2001	<i>Cyathea pseudobellisquamata</i>	Janssen & Rakotondr.	2008
<i>Aponogeton gottliebii</i>	Kasselmann & Bogner	2008	<i>Cyathea rouhamiana</i>	Rakotondr. & Janssen	2007
<i>Aponogeton masoalaensis</i>	Bogner	2002	<i>Cyathea valdesquamata</i>	Janssen & Rakotondr.	2007
<i>Aponogeton schatzianus</i>	Bogner & H.Bruggen	2001	<i>Cynorkis guttata</i>	Hermans & P.J.Cribb	2007
<i>Artabotrys darainensis</i>	Deroin & L.Gaut.	2008	<i>Cynorkis subtilis</i>	Bosser	2004
<i>Aspidostemon andohahelensis</i>	van der Werff	2006	<i>Cyphostemma ankaranense</i>	Desc.	2007
<i>Aspidostemon antongilensis</i>	van der Werff	2006	<i>Cyphostemma caerulans</i>	Desc.	2007
<i>Aspidostemon apiculatus</i>	van der Werff	2006	<i>Cyphostemma mandrakense</i>	Desc.	2007
<i>Aspidostemon capuronii</i>	van der Werff	2006	<i>Cyphostemma marojejyense</i>	Desc.	2007
<i>Aspidostemon conoideus</i>	van der Werff	2006	<i>Dalbergia gautieri</i>	Bosser & R.Rabev.	2005
<i>Aspidostemon fungiformis</i>	van der Werff	2006	<i>Dalbergia manongarivensis</i>	Bosser & R.Rabev.	2005
<i>Aspidostemon grayi</i>	van der Werff	2006	<i>Dalbergia masoalensis</i>	Bosser & R.Rabev.	2005
<i>Aspidostemon insignis</i>	van der Werff	2006	<i>Dalbergia occulta</i>	Bosser & R.Rabev.	2005
<i>Aspidostemon litoralis</i>	van der Werff	2006	<i>Dalbergia pseudoviguierei</i>	Bosser & R.Rabev.	2005
<i>Aspidostemon longipedicellatus</i>	van der Werff	2006	<i>Dioscorea bako</i>	Wilkin	2008
<i>Aspidostemon lucens</i>	van der Werff	2006	<i>Dioscorea bosseri</i>	Haigh & Wilkin	2005
<i>Aspidostemon macrophyllus</i>	van der Werff	2006	<i>Dioscorea buckleyana</i>	Wilkin	2009
<i>Aspidostemon manongarivensis</i>	van der Werff	2006	<i>Dioscorea kimiae</i>	Wilkin	2009
<i>Aspidostemon masoalensis</i>	van der Werff	2006	<i>Dioscorea orangeana</i>	Wilkin	2009
<i>Aspidostemon microphyllus</i>	van der Werff	2006	<i>Dioscorea sterilis</i>	O.Weber & Wilkin	2005
<i>Aspidostemon occultus</i>	van der Werff	2006	<i>Dombeya gautieri</i>	Dorr & Skema	2010
<i>Aspidostemon reticulatus</i>	van der Werff	2006	<i>Dypsis andilamenensis</i>	Rakotoarin. & J.Dransf	2010
<i>Aspidostemon trichandra</i>	van der Werff	2006	<i>Dypsis anjiae</i>	Rakotoarin. & J.Dransf	2010
<i>Baroniella linearifolia</i>	Klack.	2007	<i>Dypsis ankirindro</i>	W.J.Baker, Rakotoarin. & M.S.Trudgen	2009
<i>Bathiorhamnus capuronii</i>	Callm., Phillipson & Buerki	2008	<i>Dypsis betsimisarakae</i>	Rakotoarin. & J.Dransf	2010
<i>Bathiorhamnus vohemarensis</i>	Callm., Phillipson & Buerki	2008	<i>Dypsis brittiana</i>	Rakotoarin.	2009
<i>Beilschmiedia pedicellata</i>	van der Werff	2003	<i>Dypsis culminis</i>	Rakotoarin. & J.Dransf	2010
<i>Beilschmiedia rugosa</i>	van der Werff	2003	<i>Dypsis delicatula</i>	Britt & J.Dransf.	2005
<i>Bertiera brevithyrsa</i>	A.P.Davis	2010	<i>Dypsis dracaenoides</i>	Rakotoarin. & J.Dransf	2010
<i>Billburttia capenosoides</i>	Sales & Hedge	2009	<i>Dypsis gautieri</i>	Rakotoarin. & J.Dransf	2010
<i>Billburttia vaginoides</i>	Sales & Hedge	2009	<i>Dypsis gronophyllum</i>	Rakotoarin. & J.Dransf	2010
<i>Bonamia ankaranensis</i>	Deroin	2004	<i>Dypsis humilis</i>	M.S.Trudgen, Rakotoarin. & W.J.Baker	2009

Species	Scientist(s)	Year	Species	Scientist(s)	Year
<i>Dypsis jeremie</i>	Rakotoarin. & J.Dransf	2010	<i>Impatiens rapanarivoi</i>	Eb.Fisch. & Raheliv.	2007
<i>Dypsis makirae</i>	Rakotoarin. & Britt	2009	<i>Impatiens razanatsoa-charlei</i>	Eb.Fisch. & Raheliv.	2007
<i>Dypsis metallica</i>	Rakotoarin. & J.Dransf	2010	<i>Impatiens renae</i>	Eb.Fisch. & Raheliv.	2004
<i>Dypsis rakotonasoloi</i>	Rakotoarin.	2009	<i>Impatiens rivularis</i>	Eb.Fisch., Wohlh. & Raheliv.	2003
<i>Dypsis reflexa</i>	Rakotoarin. & J.Dransf	2010	<i>Impatiens salifii</i>	Eb.Fisch. & Raheliv.	2007
<i>Dypsis sancta</i>	Rakotoarin. & J.Dransf	2010	<i>Impatiens saolana</i>	Eb.Fisch. & Raheliv.	2007
<i>Dypsis vomitrando</i>	Rakotoarin. & J.Dransf	2010	<i>Impatiens scenarioi</i>	Eb.Fisch. & Raheliv.	2007
<i>Euphorbia berevoensis</i>	Lawant & Buddens.	2008	<i>Impatiens sidiformis</i>	Eb.Fisch. & Raheliv.	2004
<i>Euphorbia erythroculcata</i>	Mangelsdorff	2005	<i>Impatiens stefaniae</i>	Eb.Fisch. & Raheliv.	2004
<i>Flagenium farafanganense</i>	Ruhsam & A.P.Davis	2007	<i>Impatiens tafononensis</i>	Eb.Fisch. & Raheliv.	2007
<i>Flagenium pedunculatum</i>	Ruhsam & A.P.Davis	2007	<i>Impatiens tsararavina</i>	Eb.Fisch. & Raheliv.	2007
<i>Flagenium petrikense</i>	Ruhsam & A.P.Davis	2007	<i>Impatiens tsingycola</i>	Eb.Fisch. & Raheliv.	2007
<i>Gaertnera bambusifolia</i>	Malcomber & A.P.Davis	2005	<i>Impatiens vebrowniae</i>	Eb.Fisch., Wohlh. & Raheliv.	2003
<i>Gaertnera brevipedicellata</i>	Malcomber & A.P.Davis	2005	<i>Impatiens vellela</i>	Eb.Fisch. & Raheliv.	2004
<i>Gaertnera darciana</i>	Malcomber & A.P.Davis	2005	<i>Impatiens volatiana</i>	Eb.Fisch. & Raheliv.	2007
<i>Gaertnera ianthina</i>	Malcomber	2009	<i>Impatiens wohlhauseri</i>	Eb.Fisch. & Raheliv.	2004
<i>Gaertnera lowryi</i>	Malcomber	2009	<i>Ipomoea darainensis</i>	Deroin, Ranir. & Nusb.	2008
<i>Gaertnera monstrosa</i>	Malcomber	2009	<i>Ixora clandestina</i>	De Block	2009
<i>Gaertnera pauciflora</i>	Malcomber & A.P.Davis	2005	<i>Ixora densithyrsa</i>	De Block	2008
<i>Gaertnera raphaelii</i>	Malcomber	2009	<i>Ixora peculiaris</i>	De Block	2008
<i>Gaertnera schatzii</i>	Malcomber	2009	<i>Ixora rakotonasoloi</i>	De Block	2009
<i>Garcinia capuronii</i>	Z.S.Rogers & P.W.Sweeney	2007	<i>Jumellea alionae</i>	P.J.Cribb	2009
<i>Garcinia lowryi</i>	Z.S.Rogers & P.W.Sweeney	2007	<i>Kalanchoe inaurata</i>	Desc.	2005
<i>Gnidia neglecta</i>	Z.S.Rogers	2009	<i>Kalanchoe maromokotrensis</i>	Desc. & Rebmann	2006
<i>Gnidia razakamalalana</i>	Z.S.Rogers	2006	<i>Kalanchoe pareikiana</i>	Desc. & Lavranos	2005
<i>Goodyera goudotii</i>	Ormerod & Cavestro	2006	<i>Kalanchoe peltigera</i>	Desc.	2005
<i>Gymnosiphon marieae</i>	Cheek	2008	<i>Kalanchoe rebmannii</i>	Desc.	2006
<i>Gyrostipula obtusa</i>	Eman. & Razafim.	2007	<i>Kalanchoe tenuiflora</i>	Desc.	2004
<i>Habenaria tianae</i>	P.J.Cribb & D.L.Roberts	2008	<i>Lastreopsis coriaceosquamata</i>	Rakotondr.	2009
<i>Heliotropium perrieri</i>	J.S.Mill.	2003	<i>Lastreopsis fidelei</i>	Rakotondr.	2009
<i>Helmiopsis polyandra</i>	Appleg.	2009	<i>Lastreopsis manongarivensis</i>	Rakotondr.	2009
<i>Hibiscus lamalama</i>	Callm., Buerki & Koopman	2009	<i>Lepisanthes sambiranensis</i>	Buerki, Callm. & Lowry	2009
<i>Hildegardia dauphinensis</i>	J.G.Zaborsky	2009	<i>Ludia craggiata</i>	Z.S.Rogers, Randrian. & J.S.Mill.	2006
<i>Hilsenbergia angustifolia</i>	J.S.Mill.	2003	<i>Mantalania longipedunculata</i>	De Block & A.P.Davis	2006
<i>Hilsenbergia apetala</i>	J.S.Mill.	2003	<i>Mauloutchia annickiae</i>	Sauquet	2004
<i>Hilsenbergia bosseri</i>	J.S.Mill.	2003	<i>Mauloutchia capuronii</i>	Sauquet	2004
<i>Hilsenbergia capuronii</i>	J.S.Mill.	2003	<i>Memecylon acrogenum</i>	R.D.Stone	2006
<i>Hilsenbergia croatii</i>	J.S.Mill.	2003	<i>Memecylon amplifolium</i>	R.D.Stone	2006
<i>Hilsenbergia darciana</i>	J.S.Mill.	2003	<i>Memecylon impressivenum</i>	R.D.Stone	2006
<i>Hilsenbergia labatii</i>	J.S.Mill.	2003	<i>Memecylon interjectum</i>	R.D.Stone	2006
<i>Hilsenbergia leslieae</i>	J.S.Mill.	2003	<i>Memecylon perditum</i>	R.D.Stone	2006
<i>Hilsenbergia lowryana</i>	J.S.Mill.	2003	<i>Memecylon pterocladum</i>	R.D.Stone	2006
<i>Hilsenbergia moratiana</i>	J.S.Mill.	2003	<i>Memecylon sejunctum</i>	R.D.Stone	2006
<i>Hilsenbergia randrianasoloana</i>	J.S.Mill.	2003	<i>Memecylon xiphophyllum</i>	R.D.Stone	2006
<i>Hilsenbergia schatziana</i>	J.S.Mill.	2003	<i>Micronychia bemangidiensis</i>	Randrian. & Lowry	2009
<i>Hymenodictyon antakaranensis</i>	Razafim. & B.Bremer	2006	<i>Micronychia benono</i>	Randrian. & Lowry	2009
<i>Hymenodictyon tsingy</i>	Razafim. & B.Bremer	2006	<i>Micronychia kotozafii</i>	Randrian. & Lowry	2009
<i>Impatiens academiae-moguntiae</i>	Eb.Fisch. & Raheliv.	2007	<i>Micronychia striata</i>	Randrian. & Lowry	2009
<i>Impatiens ambahatrensis</i>	Eb.Fisch. & Raheliv.	2007	<i>Nesogordonia rakotovaoui</i>	Rakotoar., Andriamb. & Callm.	2009
<i>Impatiens ambanizanensis</i>	Eb.Fisch. & Raheliv.	2007	<i>Noronhia jeremii</i>	Hong-Wa & Callm.	2009
<i>Impatiens ampokafoensis</i>	Eb.Fisch. & Raheliv.	2007	<i>Oeocleades callmanderi</i>	Bosser	2006
<i>Impatiens andapensis</i>	Eb.Fisch. & Raheliv.	2007	<i>Olox antsiranensis</i>	Z.S.Rogers, Malécot & Sikes	2006
<i>Impatiens ankaranensis</i>	Eb.Fisch. & Raheliv.	2007	<i>Olox capuronii</i>	Z.S.Rogers, Malécot & Sikes	2006
<i>Impatiens bardotiae</i>	Eb.Fisch. & Raheliv.	2007	<i>Oliganthes anjanaribensis</i>	Beentje & D.J.N.Hind	2010
<i>Impatiens barthlottii</i>	Eb.Fisch. & Raheliv.	2007	<i>Operculicarya capuronii</i>	Randrian. & Lowry	2006
<i>Impatiens befananensis</i>	Eb.Fisch. & Raheliv.	2007	<i>Operculicarya multijuga</i>	Randrian. & Lowry	2006
<i>Impatiens benitae</i>	Eb.Fisch., Wohlh. & Raheliv.	2003	<i>Ophiocolea vokoaninensis</i>	Zjhra	2006
<i>Impatiens betsomangae</i>	Eb.Fisch. & Raheliv.	2007	<i>Pandanus callmanderiana</i>	Laivao & Buerki	2006
<i>Impatiens callmanderi</i>	Eb.Fisch., Wohlh. & Raheliv.	2003	<i>Pandanus humbertii</i>	Laivao, Callm. & Buerki	2007
<i>Impatiens carlsoniae</i>	Eb.Fisch. & Raheliv.	2007	<i>Pandanus kuepferi</i>	Callm., Wohlh. & Laivao	2003
<i>Impatiens druartii</i>	Eb.Fisch. & Raheliv.	2007	<i>Pandanus marojejicus</i>	Callm. & Laivao	2003
<i>Impatiens fianarantsoae</i>	Eb.Fisch. & Raheliv.	2007	<i>Pandanus masoalensis</i>	Laivao & Callm.	2000
<i>Impatiens georgei-schatzii</i>	Eb.Fisch. & Raheliv.	2007	<i>Pandanus nusbaumeri</i>	Callm. & L. Gaut.	2009
<i>Impatiens guillaumetii</i>	Eb.Fisch. & Raheliv.	2007	<i>Pandanus sermollianus</i>	Callm. & Buerki	2008
<i>Impatiens haingosonii</i>	Eb.Fisch. & Raheliv.	2007	<i>Pandanus validus</i>	Huynh & Callm.	2003
<i>Impatiens kraffii</i>	Eb.Fisch., Wohlh. & Raheliv.	2003	<i>Pentopetia astephana</i>	Klack.	2007
<i>Impatiens kuepferi</i>	Eb.Fisch. & Raheliv.	2004	<i>Pentopetia viridis</i>	Klack. & Meve	2007
<i>Impatiens laurentii</i>	Eb.Fisch. & Raheliv.	2007	<i>Peperomia ankaranensis</i>	G.Mathieu	2006
<i>Impatiens loki-schmidtiae</i>	Eb.Fisch. & Raheliv.	2004	<i>Peperomia costata</i>	G.Mathieu	2003
<i>Impatiens luisae-echterae</i>	Eb.Fisch., Wohlh. & Raheliv.	2003	<i>Peperomia erythrocaulis</i>	G.Mathieu	2006
<i>Impatiens maevae</i>	Eb.Fisch. & Raheliv.	2007	<i>Peperomia humbertii</i>	G.Mathieu	2003
<i>Impatiens mahalevonensis</i>	Eb.Fisch. & Raheliv.	2007	<i>Peperomia mantadiana</i>	G.Mathieu	2003
<i>Impatiens mami</i>	Eb.Fisch. & Raheliv.	2007	<i>Peperomia nicolliae</i>	G.Mathieu	2003
<i>Impatiens mayae-valeriae</i>	Eb.Fisch. & Raheliv.	2004	<i>Peperomia pluvilsilvatica</i>	G.Mathieu	2003
<i>Impatiens messmerae</i>	Eb.Fisch. & Raheliv.	2007	<i>Peperomia ratticaudata</i>	G.Mathieu	2003
<i>Impatiens mindiae</i>	Eb.Fisch., Wohlh. & Raheliv.	2003	<i>Peperomia richardsonii</i>	G.Mathieu	2006
<i>Impatiens nanatonanensis</i>	Eb.Fisch. & Raheliv.	2007	<i>Peperomia terebinthina</i>	G.Mathieu	2003
<i>Impatiens nicolliae</i>	Eb.Fisch. & Raheliv.	2007	<i>Peponidium crassifolium</i>	Lantz, Klack. & Razafim.	2007
<i>Impatiens nidus-aptis</i>	Eb.Fisch. & Raheliv.	2007	<i>Phanerodiscus capuronii</i>	Malécot, G.E.Schatz & Bosser	2003
<i>Impatiens nomenyae</i>	Eb.Fisch. & Raheliv.	2007	<i>Phyllarthron nocturnum</i>	Zjhra	2006
<i>Impatiens nosymangabensis</i>	Eb.Fisch. & Raheliv.	2007	<i>Phyllarthron sahamalazensis</i>	Zjhra	2006
<i>Impatiens nusbaumeri</i>	Eb.Fisch. & Raheliv.	2007	<i>Phyllarthron vokoaninensis</i>	Zjhra	2006
<i>Impatiens paranyi</i>	Eb.Fisch. & Raheliv.	2007	<i>Pilgeria madagascariensis</i>	Z.S.Rogers, Nickrent & Malécot	2008
<i>Impatiens purpureolucida</i>	Eb.Fisch., Wohlh. & Raheliv.	2003	<i>Plectranthus papilionaceus</i>	Ranir. & Phillipson	2007
<i>Impatiens purroi</i>	Eb.Fisch., Wohlh. & Raheliv.	2003	<i>Plectranthus rosulatus</i>	Hedge	2005
<i>Impatiens rakotomalazana</i>	Eb.Fisch. & Raheliv.	2007	<i>Plukenetia ankaranensis</i>	L.J.Gillespie	2007

Species	Scientist(s)	Year	Species	Scientist(s)	Year
<i>Plukenetia decidua</i>	L.J.Gillespie	2007	<i>Hydrothelphusa vencesi</i>	Neil Cumberlidge, Saskia A. E. Marijnissen & Jonelle Thompson	2007
<i>Polyscias kalabenonensis</i>	Lowry & Callm.	2009	<i>Laelius mekes</i>	D. N. Barbosa & C. O. Azevedo	2009
<i>Polyscias pachyepidicellata</i>	Lowry & Callm.	2009	<i>Laelius mekes</i>	D. N. Barbosa & C. O. Azevedo	2009
<i>Polyscias wohlhauseri</i>	Lowry & Callm.	2009	<i>Mahafalymydas tuckeri</i>	B. C. Kondratieff, Ryan J. Carr & Michael E. Irwin	2005
<i>Polystachya clareae</i>	Hermans	2003	<i>Mahafalymydas wiegmanni</i>	B. C. Kondratieff, Ryan J. Carr & Michael E. Irwin	2005
<i>Pouzolzia tsaratananensis</i>	Friis & Wilmot-Dear	2006	<i>Nephila komaci</i>	Kuntner & Coddington	2009
<i>Prockioptis calcicola</i>	G.E.Schatz & Lowry	2003	<i>Ninetis toliara</i>	Bernhard A. Huber & Hisham K. El-Hennawy	2007
<i>Pseudotectaria analamazaotrensis</i>	Rakotondr.	2010	<i>Olixon martini</i>	Volker Lohrmann & Michael Ohl	2007
<i>Pseudotectaria jouyana</i>	Rakotondr.	2010	<i>Olixon toliaraensis</i>	Volker Lohrmann & Michael Ohl	2007
<i>Pyrenacantha ambrensis</i>	Labat, El-Achkar & R.Rabev.	2006	<i>Paduniella ambra</i>	Kjell Arne Johanson & János Oláh	2010
<i>Pyrenacantha andapensis</i>	Labat, El-Achkar & R.Rabev.	2006	<i>Paduniella flinti</i>	Kjell Arne Johanson & János Oláh	2010
<i>Pyrenacantha perrieri</i>	Labat, El-Achkar & R.Rabev.	2006	<i>Paduniella madagassa</i>	Kjell Arne Johanson & János Oláh	2010
<i>Pyrenacantha rakotozafyi</i>	Labat, El-Achkar & R.Rabev.	2006	<i>Paduniella nandra</i>	Kjell Arne Johanson & János Oláh	2010
<i>Pyrenacantha tropophila</i>	Labat, El-Achkar & R.Rabev.	2006	<i>Paduniella sona</i>	Kjell Arne Johanson & János Oláh	2010
<i>Pyrostria pendula</i>	Lantz, Klack. & Razafim.	2007	<i>Petrohrincus andohel</i>	Kjell Arne Johanson & János Oláh	2006
<i>Pyrostria serpentina</i>	Lantz, Klack. & Razafim.	2007	<i>Petrohrincus andring</i>	Kjell Arne Johanson & János Oláh	2006
<i>Radcliffea smithii</i>	Petra Hoffm. & K.Wurdack	2006	<i>Petrohrincus dhritiagram</i>	Kjell Arne Johanson & János Oláh	2006
<i>Ravenea beentjei</i>	Rakotoarin. & J.Dransf.	2010	<i>Petrohrincus newidop</i>	Kjell Arne Johanson & János Oláh	2006
<i>Ravenea delicatula</i>	Rakotoarin.	2008	<i>Petrohrincus pauliani</i>	Kjell Arne Johanson & János Oláh	2006
<i>Ravenea hypoleuca</i>	Rakotoarin. & J.Dransf.	2010	<i>Petrohrincus tsaratananensis</i>	Kjell Arne Johanson & János Oláh	2006
<i>Rhodocolea lemuriophila</i>	Zjhra	2006	<i>Planeocoris redeii</i>	Dominik Chlund	2010
<i>Rhodocolea multiflora</i>	Zjhra	2006	<i>Ranomafana pollocki</i>	Hermes E. Escalona & Adam Slipinski	2008
<i>Rhopalocarpus mollis</i>	G.E.Schatz & Lowry	2006	<i>Ravavy miafina</i>	Brian L. Fisher	2009
<i>Rhopalocarpus randrianaivoi</i>	G.E.Schatz & Lowry	2006	<i>Rhoizema mahalevonum</i>	Kjell Arne Johanson & János Oláh	2006
<i>Schizolaena isaloensis</i>	Rabeh. & Lowry	2009	Total: 42		
<i>Schizolaena raymondii</i>	Lowry & Rabeh.	2006	Fish		
<i>Secamone galinae</i>	Klack.	2003	<i>Allenbatrachus meridionalis</i>	Greenfield, D.W. & Wm. L. Smith	2004
<i>Secamone trichostemon</i>	Klack.	2005	<i>Arius festinus</i>	Ng & Sparks	2003
<i>Seddera madagascariensis</i>	Deroin & Sebsebe	2009	<i>Arius uncinatus</i>	Ng & Sparks	2003
<i>Staufferia capuronii</i>	Z.S.Rogers, Nickrent & Malécot	2008	<i>Bedotia albomarginata</i>	Sparks & Rush	2005
<i>Stephanodaphne pedicellata</i>	Z.S.Rogers	2004	<i>Bedotia alveyi</i>	Jones, C.C., W.L. Smith & J.S. Sparks	2010
<i>Stephanodaphne pilosa</i>	Z.S.Rogers	2004	<i>Bedotia leucopteron</i>	Loiselle & Rodriguez	2007
<i>Stephanodaphne schatzii</i>	Z.S.Rogers	2004	<i>Bedotia marojejy</i>	Stiassny, M.L.J. & I.J. Harrison	2000
<i>Sterculia cheekii</i>	Dorr	2004	<i>Bedotia masoala</i>	Sparks, J.S.	2001
<i>Suregada celastroides</i>	Radcl.-Sm. & Petra Hoffm.	2004	<i>Gogo atratus</i>	Ng, Sparks & Loiselle	2008
<i>Tahina spectabilis</i>	J.Dransf. & Rakotoarin.	2008	<i>Paretropus tsimoly</i>	Stiassny, Chakrabarty & Loiselle	2001
<i>Tarenna capuroniana</i>	De Block	2005	<i>Parupeneus fraserorum</i>	Randall, J.E. & D.R. King	2009
<i>Thammoldenlandia ambovombensis</i>	Groeninckx	2010	<i>Ptychochromis ernestmagnusi</i>	Sparks, J.S. & M.L.J. Stiassny	2010
<i>Toliara arenacea</i>	Judz.	2009	<i>Ptychochromoides itasy</i>	Sparks, J.S.	2004
<i>Tricalysia ambrensis</i>	Ranariv. & De Block	2007	<i>Ptychochromoides vondrozo</i>	Sparks & Reinthal	2001
<i>Tricalysia dauphinensis</i>	Ranariv. & De Block	2007	<i>Rheocles derhami</i>	Stiassny, M.L.J. & D.M. Rodriguez	2001
<i>Tricalysia humbertii</i>	Ranariv. & De Block	2007	<i>Rheocles vatosoa</i>	Stiassny, M.L.J., D.M. Rodriguez & P.V. Loiselle	2002
<i>Tricalysia majungensis</i>	Ranariv. & De Block	2007	<i>Sauvagella robusta</i>	Stiassny	2002
<i>Tricalysia orientalis</i>	Ranariv. & De Block	2007	Total:17		
<i>Trichilia sambiranensis</i>	Callm. & Phillipson	2009	Amphibians		
<i>Uncarina ankaranensis</i>	Ihlenf.	2004	<i>Anodonthyla emilei</i>	Vences, Glaw, Köhler, & Wollenberg	2010
<i>Uncarina ihlenfeldtiana</i>	Lavranos	2004	<i>Anodonthyla hutchisoni</i>	Fenolio, Walvoord, Stout, Randrianirina & Andreone	2007
<i>Uvaria relambo</i>	Deroin & L.Gaut.	2006	<i>Anodonthyla jeanbai</i>	Vences, Glaw, Köhler & Wollenberg	2010
<i>Uvaria sambiranensis</i>	Deroin & L.Gaut.	2006	<i>Anodonthyla moramora</i>	Glaw & Vences	2005
<i>Warneckea masoalae</i>	R.D.Stone	2006	<i>Anodonthyla theoi</i>	Vences, Glaw, Köhler & Wollenberg	2010
<i>Weinmannia aggregata</i>	Z.S.Rogers & J.Bradford	2004	<i>Anodonthyla vallani</i>	Vences, Glaw, Köhler & Wollenberg	2010
<i>Weinmannia magnifica</i>	J.Bradford & Z.S.Rogers	2004	<i>Blommersia sarotra</i>	Glaw & Vences	2002
<i>Wielandia unifex</i>	Petra Hoffm. & McPherson	2007	<i>Boophis arcanus</i>	Glaw, Köhler, De la Riva, Vieites & Vences	2010
<i>Xerochlamys coriacea</i>	Hong-Wa	2009	<i>Boophis axelmeyeri</i>	Vences, Andreone & Vieites	2005
<i>Xerochlamys itremoensis</i>	Hong-Wa	2009	<i>Boophis baetkei</i>	Köhler, Glaw & Vences	2008
<i>Xerochlamys undulata</i>	Hong-Wa	2009	<i>Boophis bottae</i>	Vences & Glaw	2002
<i>Xylopia kalabenonensis</i>	D.M.Johnson, Deroin & Callm.	2009	<i>Boophis calcaratus</i>	Vallan, Vences & Glaw	2010
<i>Zygophlebia anjanaharibensis</i>	Rakotondr.	2006	<i>Boophis entingae</i>	Glaw, Köhler, De la Riva, Vieites & Vences	2010
<i>Zygophlebia goodmanii</i>	Rakotondr.	2006	<i>Boophis feonmyala</i>	Glaw, Vences, Andreone & Vallan	2001
Total: 385			<i>Boophis haematopus</i>	Glaw, Vences, Andreone & Vallan	2001
Invertebrates			<i>Boophis haingana</i>	Glaw, Köhler, De la Riva, Vieites & Vences	2010
<i>Afrorheithrus admirabilis</i>	John S. Weaver Iii, François-Marie Gibon & Pavel Chvojka	2008	<i>Boophis liami</i>	Vallan, Vences & Glaw	2003
<i>Afrorheithrus fallax</i>	John S. Weaver Iii, François-Marie Gibon & Pavel Chvojka	2008	<i>Boophis lilianae</i>	Köhler, Glaw & Vences	2008
<i>Afrorheithrus mirus</i>	John S. Weaver Iii, François-Marie Gibon & Pavel Chvojka	2008	<i>Boophis luciae</i>	Glaw, Köhler, De la Riva, Vieites & Vences	2010
<i>Aptinoma antongil</i>	Brian L. Fisher	2009	<i>Boophis miadana</i>	Glaw, Köhler, De la Riva, Vieites & Vences	2010
<i>Aptinoma mangabe</i>	Brian L. Fisher	2009	<i>Boophis picturatus</i>	Glaw, Vences, Andreone & Vallan	2001
<i>Cheimacheramus rossi</i>	Kjell Arne Johanson & János Oláh	2006	<i>Boophis piperatus</i>	Glaw, Köhler, De la Riva, Vieites & Vences	2010
<i>Coptotriche alavelona</i>	Lees And Stonis	2007	<i>Boophis praedictus</i>	Glaw, Köhler, De la Riva, Vieites & Vences	2010
<i>Garcorops jadis</i>	Jan Bosselaers	2004	<i>Boophis pyrhrus</i>	Glaw, Vences, Andreone & Vallan	2001
<i>Helicopsyche ambodiva</i>	Kjell Arne Johanson & János Oláh	2006	<i>Boophis roseipalmatus</i>	Glaw, Köhler, De la Riva, Vieites & Vences	2010
<i>Helicopsyche hadika</i>	Kjell Arne Johanson & János Oláh	2006	<i>Boophis sambirano</i>	Vences & Glaw	2005
<i>Helicopsyche ninakosha</i>	Kjell Arne Johanson & János Oláh	2006	<i>Boophis sandrae</i>	Glaw, Köhler, De la Riva, Vieites & Vences	2010
<i>Heptascelio noyesi</i>	Masner & Johnson	2008	<i>Boophis schuboeae</i>	Glaw & Vences	2002
<i>Heptascelio orarius</i>	Johnson & Masner	2008			
<i>Heptascelio paralugens</i>	Masner & Johnson	2008			
<i>Heptascelio sicarius</i>	Johnson & Musetti	2008			
<i>Heptascelio teres</i>	Johnson & Masner	2008			
<i>Hessemydas Parkeri</i>	B. C. Kondratieff, Ryan J. Carr & Michael E. Irwin	2005			
<i>Hessemydas tulear</i>	B. C. Kondratieff, Ryan J. Carr & Michael E. Irwin	2005			

Species	Scientist(s)	Year	Species	Scientist(s)	Year
<i>Boophis solomaso</i>	Vallan, Vences & Glaw	2003	<i>Phelsuma hielscheri</i>	Rösler	2001
<i>Boophis spinophis</i>	Glaw, Köhler, De la Riva, Vieites & Vences	2010	<i>Phelsuma hoeschi</i>	Berghof & Trautmann	2009
<i>Boophis tampoka</i>	Köhler, Glaw & Vences	2008	<i>Phelsuma kely</i>	Schönecker, Bach & Glaw	2004
<i>Boophis tasymana</i>	Vences & Glaw	2002	<i>Phelsuma malamakibo</i>	Nussbaum, Raxworthy, Raselimanana & Ramanamanjato	2000
<i>Boophis ulfumi</i>	Wollenberg, Andreone, Glaw & Vences	2008	<i>Phelsuma ravenala</i>	Raxworthy, Ingram, Rabibisoa & Pearson	2007
<i>Boophis vittatus</i>	Glaw, Vences, Andreone & Vallan	2001	<i>Phelsuma roesleri</i>	Glaw, Gehring, Köhler, Franzen & Vences	2010
<i>Cophyla berara</i>	Vences, Andreone & Glaw	2005	<i>Phelsuma vanheygeni</i>	Lerner	2004
<i>Gephyromantis ambohitra</i>	Vences & Glaw	2001	<i>Pseudoacantias menamainty</i>	Andreone & Greer	2002
<i>Gephyromantis azzurrae</i>	Mercurio & Andreone	2007	<i>Pseudoacantias unicolor</i>	Sakata & Hikida	2003
<i>Gephyromantis enki</i>	Glaw & Vences	2002	<i>Pseudoxyrhopus oblectator</i>	Cadle	1999
<i>Gephyromantis moseri</i>	Glaw & Vences	2002	<i>Sirenoscincus yamagishii</i>	Sakata & Hikida	2003
<i>Gephyromantis ruweweeki</i>	Vences & De la Riva	2007	<i>Thamnosophis martae</i>	Glaw, Franzen & Vences	2005
<i>Gephyromantis salegy</i>	Andreone, Aprea, Vences & Odierna	2003	<i>Thamnosophis mavotenda</i>	Glaw, Nagy, Köhler, Franzen & Vences	2009
<i>Gephyromantis schilfi</i>	Glaw & Vences	2000	<i>Trachylepis tandrefana</i>	Nussbaum, Raxworthy & Ramanamanjato	1999
<i>Gephyromantis striatus</i>	Vences, Glaw, Andreone, Jesu & Schimmenti	2002	<i>Trachylepis tavaratra</i>	Ramanamanjato, Nussbaum & Raxworthy	1999
<i>Gephyromantis tandroka</i>	Glaw & Vences	2001	<i>Trachylepis volamenaloha</i>	Nussbaum, Raxworthy & Ramanamanjato	1999
<i>Gephyromantis tschenki</i>	Glaw & Vences	2001	<i>Typhlops andasibensis</i>	Wallach & Glaw	2009
<i>Gephyromantis zavona</i>	Vences, Andreone, Glaw & Randrianirina	2003	<i>Typhlops rajeryi</i>	Renoult & Raselimanana	2009
<i>Guibemantis kathrinae</i>	Glaw, Vences & Gossmann	2000	<i>Uroplatus giganteus</i>	Glaw, Kosuch, Henkel, Sound & Böhme	2006
<i>Guibemantis timidus</i>	Vences & Glaw	2005	<i>Uroplatus pietschmanni</i>	Böhle & Schönecker	2004
<i>Heterixalus carbonei</i>	Vences, Glaw, Jesu & Schimmenti	2000	<i>Xenotyphlops mocquardi</i>	Wallach, Mercurio & Andreone	2007
<i>Mantella manery</i>	Vences, Glaw & Böhme	1999	<i>Zonosaurus anelanelany</i>	Raselimanana, Raxworthy & Nussbaum	2000
<i>Mantidactylus charlotteae</i>	Vences & Glaw	2004	<i>Zonosaurus bemaraha</i>	Raselimanana, Raxworthy & Nussbaum	2000
<i>Mantidactylus noralotae</i>	Mercurio & Andreone	2007	<i>Zonosaurus maramaintso</i>	Raselimanana, Raxworthy & Raxworthy	2006
<i>Mantidactylus zipperi</i>	Vences & Glaw	2004	<i>Zonosaurus tsingy</i>	Raselimanana, Raxworthy & Nussbaum	2000
<i>Mantidactylus zolitschka</i>	Glaw & Vences	2004			
<i>Paradoxophyla tiarano</i>	Andreone, Aprea, Odierna & Vences	2006	Total: 61		
<i>Platypelis mavomavo</i>	Andreone, Fenolio & Walvoord	2003	Mammals		
<i>Platypelis tetra</i>	Andreone, Fenolio & Walvoord	2003	<i>Avahi cleesei</i>	Thalmann U. & Geissmann T.	2005
<i>Plethodontohyla fonetana</i>	Glaw, Köhler, Bora & Rabibisoa	2007	<i>Avahi unicolor</i>	Thalmann U. & Geissmann T.	2000
<i>Plethodontohyla guentheri</i>	Glaw & Vences	2007	<i>Chaerephon atsinanana</i>	Goodman, Buccas, Naidoo, Ratrimomanarivo, Taylor & Lamb	2010
<i>Plethodontohyla mihanika</i>	Vences, Raxworthy, Nussbaum & Glaw	2003	<i>Chaerephon jobimena</i>	Goodman & Cardiff	2004
<i>Rhombophryne coronata</i>	Vences & Glaw	2003	<i>Cheirogaleus minusculus</i>	Groves	2000
<i>Rhombophryne matavy</i>	D'Cruze, Köhler, Vences & Glaw	2010	<i>Cheirogaleus ravus</i>	Groves	2000
<i>Scaphiophryne boribory</i>	Vences, Raxworthy, Nussbaum & Glaw	2003	<i>Eliurus antsingy</i>	Carleton, Goodman & Rakotondravony	2001
<i>Scaphiophryne menabensis</i>	Glos, Glaw & Vences	2005	<i>Emballonura tivato</i>	Goodman, Cardiff, Ranivo, Russell & Yoder	2006
<i>Spinomantis nussbaumi</i>	Cramer, Rabibisoa & Raxworthy	2008	<i>Lepilemur aeclis</i>	Andriaholinirina, N., Fausser, J., Roos, C., Rumpler, Y., et al	2006
<i>Spinomantis tavaratra</i>	Cramer, Rabibisoa & Raxworthy	2008	<i>Lepilemur ahmansoni</i>	Louis, Jr	2006
<i>Stumpffia helenae</i>	Vallan	2000	<i>Lepilemur betsileo</i>	Louis, Jr	2006
<i>Tsingymantis antitra</i>	Glaw, Hoegg & Vences	2006	<i>Lepilemur fleuretae</i>	Louis, Jr	2006
<i>Wakea madinika</i>	Vences, Andreone, Glaw & Mattioli	2002	<i>Lepilemur grewcocki</i>	Louis, Jr	2006
Total: 69			<i>Lepilemur hubbardi</i>	Louis, Jr	2006
Reptiles			<i>Lepilemur jamesi</i>	Louis, Jr	2006
<i>Amphiglossus mandady</i>	Andreone & Greer	2002	<i>Lepilemur milanoii</i>	Louis, Jr	2006
<i>Amphiglossus spilostichus</i>	Andreone & Greer	2002	<i>Lepilemur petteri</i>	Louis, Jr	2006
<i>Amphiglossus stylus</i>	Andreone & Greer	2002	<i>Lepilemur randrianasoli</i>	Andriaholinirina, N., Fausser, J., Roos, C., Rumpler, Y., et al.	2006
<i>Amphiglossus tanysona</i>	Andreone & Greer	2002	<i>Lepilemur sahamalazensis</i>	Andriaholinirina, N., Fausser, J., Roos, C., Rumpler, Y., et al.	2006
<i>Calumma amber</i>	Raxworthy & Nussbaum	2006	<i>Lepilemur seali</i>	Louis, Jr	2006
<i>Calumma crypticum</i>	Raxworthy & Nussbaum	2006	<i>Lepilemur tymerlachsoni</i>	Louis, Jr	2006
<i>Calumma hafahafa</i>	Raxworthy & Nussbaum	2006	<i>Lepilemur wrighti</i>	Louis, Jr	2006
<i>Calumma jeiy</i>	Raxworthy & Nussbaum	2006	<i>Macrotrarmys petteri</i>	Goodman and Soarimalala	2005
<i>Calumma peltierorum</i>	Raxworthy & Nussbaum	2006	<i>Microcebus berthae</i>	Rasoloarison et al.	2000
<i>Calumma tarzan</i>	Gehring, Pabijan, Ratsavina, Köhler, Vences & Glaw	2010	<i>Microcebus jollyae</i>	Louis et al	2006
<i>Calumma tsycorne</i>	Raxworthy & Nussbaum	2006	<i>Microcebus lehilahytsara</i>	Roos and Kappeler	2005
<i>Calumma vatsoa</i>	Andreone, Mattioli, Jesu & Randrianirina	2001	<i>Microcebus macarthurii</i>	Radespiel et al.	2008
<i>Calumma vencesi</i>	Andreone, Mattioli, Jesu & Randrianirina	2001	<i>Microcebus maminirina</i>	Andriantompohavana et al.	2006
<i>Compsophis fatsibe</i>	Mercurio & Andreone	2005	<i>Microcebus mittermeieri</i>	Louis et al.	2006
<i>Furcifer nicosiai</i>	Esu, Mattioli & Schimmenti	1999	<i>Microcebus sambiranensis</i>	Rasoloarison et al	2000
<i>Furcifer timoni</i>	Glaw, Köhler & Vences	2009	<i>Microcebus simmonsii</i>	Louis et al.	2006
<i>Heteroliodon foxy</i>	Glaw, Vences & Nussbaum	2005	<i>Microcebus tavarata</i>	Rasoloarison et al	2000
<i>Heteroliodon lava</i>	Nussbaum & Raxworthy	2000	<i>Microgale jenkinsae</i>	Goodman & Soarimalala	2004
<i>Liophidium maintikibo</i>	Franzen, Jones, Raselimanana, Nagy, C'cruze, Glaw & Vences	2009	<i>Microgale jobihely</i>	Goodman, Raxworthy, Maminirina & Olson	2006
<i>Liophidium pattoni</i>	Vieites, Ratsavina, Randrianiana, Nagy, Glaw & Vences	2010	<i>Microgale nasoloi</i>	Jenkins & Goodman	1999
<i>Liopholidophis dimorphus</i>	Glaw, Nagy, Franzen & Vences	2007	<i>Miniopterus petersoni</i>	Goodman, Bradman, Maminirina, Ryan, Christidis & Belinda Appleton	2008
<i>Lygodactylus roavolana</i>	Puente, Glaw, Vieites & Vences	2009	<i>Miniopterus sororculus</i>	Goodman, Ryan, Maminirina, Fahr, Christidis & Appleton	2007
<i>Madascincus nanus</i>	Andreone & Greer	2002	<i>Mirza zaza</i>	Kappeler & Roos	2005
<i>Paracantias fatsika</i>	Köhler, Vences, Erbacher & Glaw	2010	<i>Scotophilus marovaza</i>	Goodman, Ratrimomanarivo, Randrianandrianina	2006
<i>Paracantias hafa</i>	Andreone & Greer	2002	<i>Scotophilus tandrefana</i>	Goodman, S.M., R.K.B. Jenkins & F.H. Ratrimomanarivo	2005
<i>Paracantias kankana</i>	Köhler, Vieites, Glaw, Kaffenberger & Vences	2009	<i>Voalavo antsahabensis</i>	Goodman, Rakotondravony, Randriamanantsoa & Rakotomalala	2005
<i>Paracantias manify</i>	Andreone & Greer	2002			
<i>Paracantias tsararano</i>	Andreone & Greer	2002	Total: 41		
<i>Paroedura karstophila</i>	Nussbaum & Raxworthy	2000			
<i>Paroedura lohatsara</i>	Glaw, Vences & Schmidt	2001			
<i>Paroedura malingoka</i>	Nussbaum & Raxworthy	2000			
<i>Paroedura tanjaka</i>	Nussbaum & Raxworthy	2000			
<i>Paroedura vahiny</i>	Nussbaum & Raxworthy	2000			
<i>Paroedura vazimba</i>	Nussbaum & Raxworthy	2000			
<i>Phelsuma borai</i>	Glaw, Köhler & Vences	2009			

GRAND TOTAL: 615

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36%

of all primate families (five of 14) are found in Madagascar, the land of lemurs and a highest priority for primate conservation

587,000 km²

about the size of France, Madagascar is the world's fourth largest island



250,000 species

Madagascar is home to 5% of the world's plant and animal species and most of them are endemic to the island

20 million

inhabitants, many of them facing poverty. Despite its rich biodiversity, Madagascar remains one of the world's poorest nations



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