

THE KENYA REPTILE ATLAS – IT’S FREE AND IS CITIZEN SCIENCE IN ACTION!

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How do you inform the public, inexpensively, about reptiles? In recent years a vigorous debate has been running in the scientific world; should scientific knowledge be free, or should it be paid for? Research costs money, yet scientists must do research - fieldwork or experimental work - to gain knowledge. Humanity doesn't progress without increasing knowledge. Who funds that research?

Some say that scientists should be free to profit from their work, if for no other reason that it funds further research. We should be prepared to pay for data and hence science journals cannot be

free. Others say that government should pay; a responsible country will fund its scientists, pay for their research and disseminate knowledge for free. The debate continues.

The prestigious scientific journal 'Nature' recently reported that some big research funding agencies are beginning to punish, by withholding grant money, researchers who do not make their publications openly available. Some research organisations will not promote their scientists who do not disseminate their knowledge. The pendulum is swinging towards the idea; knowledge should be free.

The Kenya Reptile Atlas

A project funded by the Rufford Foundation, under the auspices of the National Museum of Kenya; Department of Herpetology

A free, downloadable, atlas of Kenya's reptiles. It's a resource for every naturalist in Kenya, and it costs nothing! Starting now, regularly updated. For each species, you get illustrations, a description and a map

To download material, log on to kenyareptileatlas.com and click on downloads

We also want your observations of reptiles. Send digital pictures or any other data to kenyareptileatlas@gmail.com

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NATIONAL MUSEUMS OF KENYA
WHERE HERITAGE LIVES ON

The Team

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The atlas poster

How can we pass this knowledge to the public? As scientists and herpetologists, working with Kenyan animals, our business is not just to research, but also to inform the average Kenyan about reptiles and amphibians. The Nobel Prize-winning scientist Erwin Schrodinger once said, 'if you cannot, in the long run, tell everyone what you have been doing, your doing is worthless'. Many Kenyans are interested in the creatures of the natural world. How to reach them? The big news media outlets have little time for crocodiles, snakes, lizards and tortoises, other than as curiosities or for sensation. Consider; when did you last see an item on the television or an article in newspapers about crocodiles, or snakes, or chameleons? If you did, it was likely to be a brief sensational story about a reptile trying to eat, or bite somebody. Occasional documentaries about reptiles do appear on television, but reptiles don't appeal the way that the 'Big Five', or cuddly animals do. It's easy to love elephants, rhinos and lions, but not mambas or Agama lizards. And science and television tend to make uncomfortable bedfellows.

As scientists, our efforts are often scrutinised by our employing organisations, and measured in terms of papers published; we won't continue to be employed unless we research and publish. But scientific papers reach few, especially in a country like Kenya.

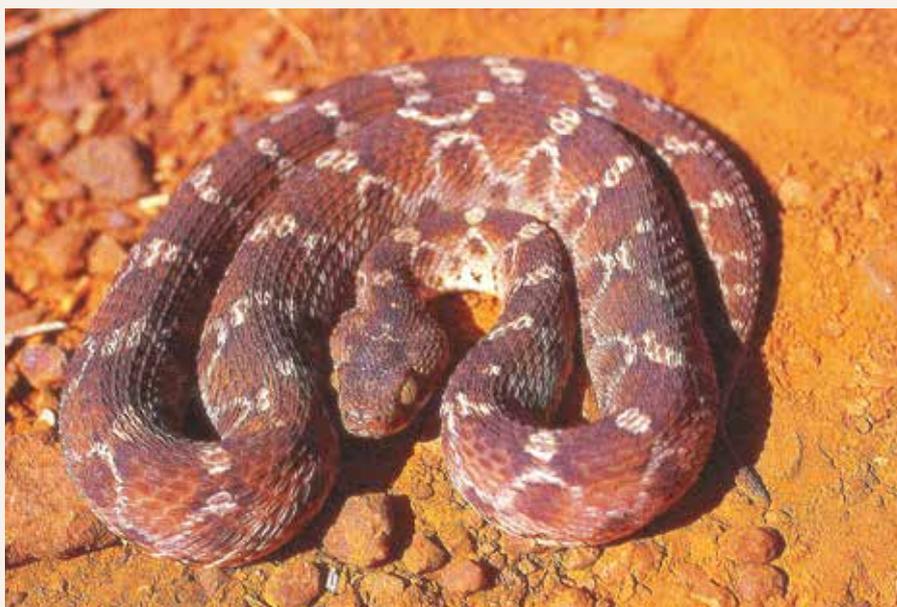


PHOTO BY: STEPHEN SAWIS

Top: Carpet viper, *Echis pyramidum*, medically significant but its distribution is poorly known. **Below:** Sometimes specimens are hard to find; Steve, Patrick and Vincent seeing what's hiding under a rock.

THE NOBEL PRIZE-WINNING SCIENTIST ERWIN SCHRODINGER ONCE SAID, 'IF YOU CANNOT, IN THE LONG RUN, TELL EVERYONE WHAT YOU HAVE BEEN DOING, YOUR DOING IS WORTHLESS'

The most prestigious herpetological periodical in Africa is the African Journal of Herpetology; but it only prints a few hundred copies. Less than 30 scientists in Kenya receive it. That means, if you were to consider the population of Nairobi, three million plus, only three of them on average would be reading this journal.

Periodicals have small circulation figures. Sometimes we write books, or magazine articles, occasionally we get a short mention somewhere or another in the media. But most of the time our work has little exposure. And our popular material is expensive a good book on Kenya's reptiles costs several thousand shillings. Such books are beyond the reach of most ordinary people, especially students.

So our new project, the Kenya reptile atlas, is an attempt at genuine citizen science. It is a free resource for anyone who has access to a computer and the internet. To utilise it, you don't have to own a computer, so long as you can find one to use, or a Smartphone, and download the accounts. And it is constantly being added to and updated. You can find it at: www.kenyareptileatlas.com, and go to downloads. At present, only 50 or so species are available, but as time goes by, we'll eventually have all of Kenya's reptiles available. Free for all.

So what will you get? The accounts are grouped. We have started with the

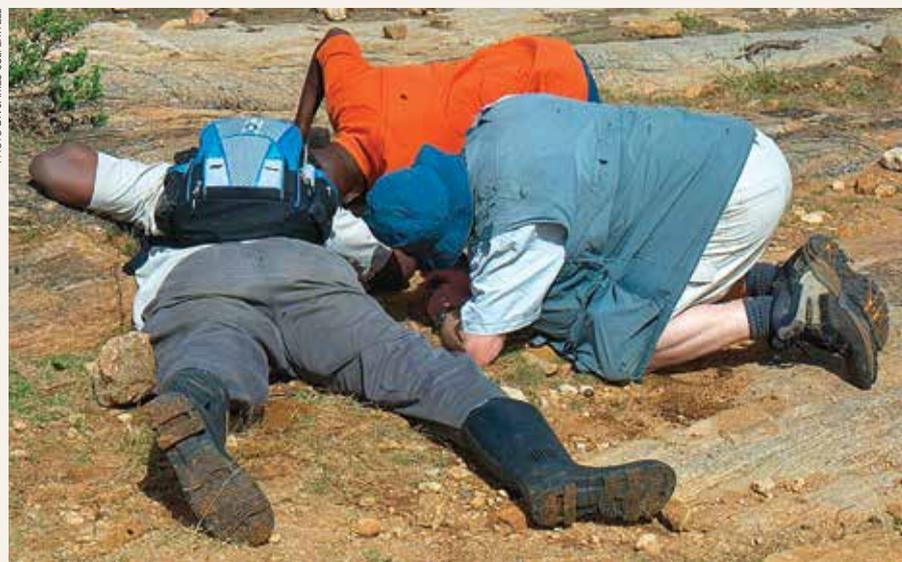
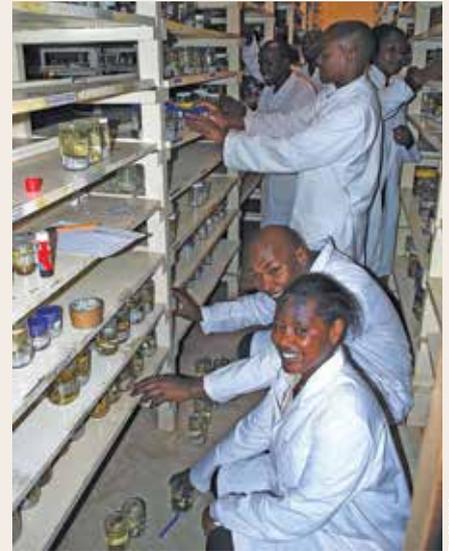


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Top Left: Steve Spawls and Patrick Malonza examine a crucial green mamba specimen from Meru National Park.

Top Right: Vincent Muchai and enthusiastic students examining specimens in the National Museum collection.

Below Right: Taita Hills blade-horned chameleon, *Kinyongia boehmei*, a Kenya endemic with a tiny range.

Below Left: The atlas team and Tom Butynski extract an agama from a rock crack in the Lolldaiga Hills.

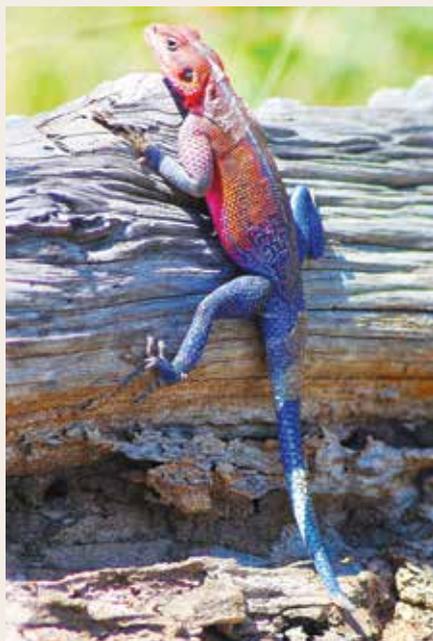
medically important snakes, the front fanged dangerous ones. These are the elapids (cobras, mambas, garter snakes and relatives) and the vipers (big vipers, carpet vipers, night adders and bush vipers). This section will be useful to many, especially doctors and other medical professionals, who want to find out what dangerous snakes occur in their area, and thus what snake might have possibly bitten the patient they are viewing. But anyone who wants to know what sort of dangerous snakes might be around where they live, or where they intend to visit, will also find it useful. We have also put up the chameleons,

because not only are they enchanting animals, but African chameleon taxonomy (the science of classification) is changing fast, with new species being described, (particularly from remote areas), new records being made and the biological molecules (in particular DNA) are clarifying the relationships between the various forms. So you can get up-to-date material, and find out how many species occur in Kenya, how they live and where they are found. And it costs nothing; download it onto your computer or Smartphone.

What has been heartening, in our efforts has been the support we have

received from various bodies. The Rufford Foundation have funded the costs of field trips and work at the National Museums of Kenya, and many scientists and herpetological professionals have given their time to look at accounts, and have generously allowed us the use of their precious photographs. As time passes, we hope to get all of Kenya's reptile species onto the website, and then run updates, informing people of the changes in taxonomy, distribution

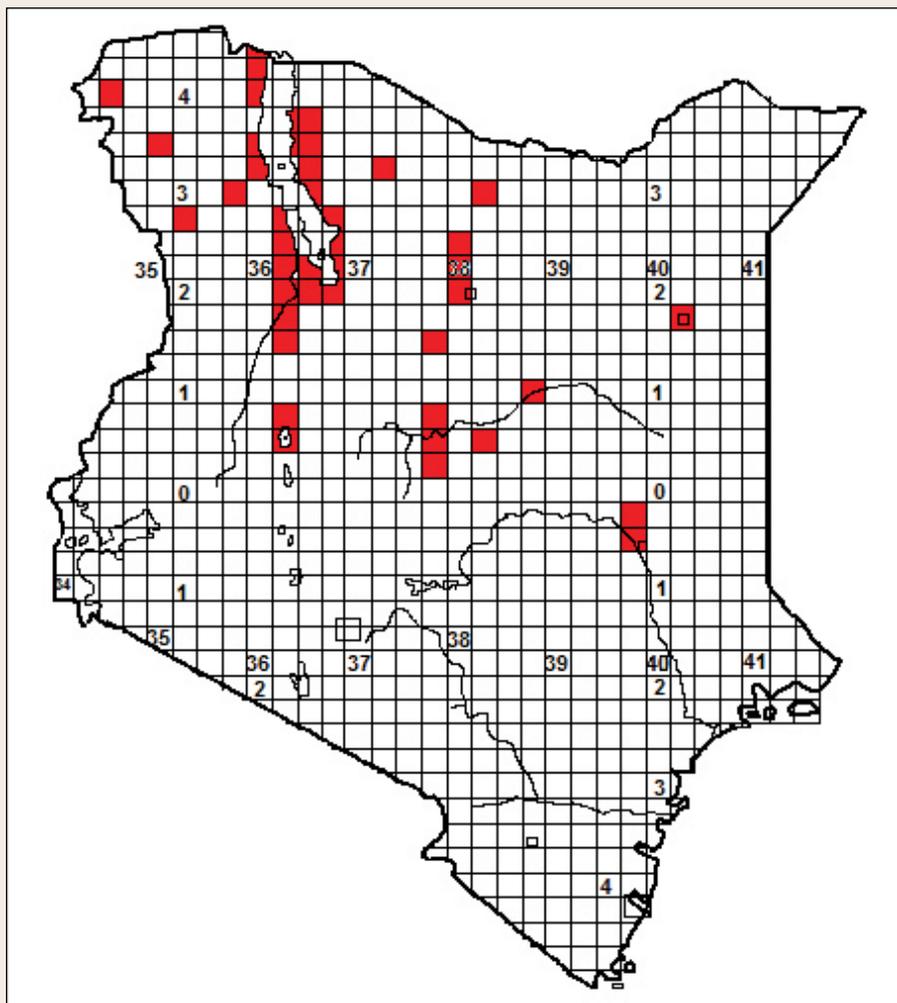
PHOTOS BY: STEPHEN SPAWIS



Top: The Mwanza flat-headed agama, *Agama mwanzae*.

Right: Map of the distribution of the carpet viper.

Below Right: Tsavo West; a poorly-known area in herpetological terms, despite its popularity.



etc. We're also always pleased to receive contributions from the public; contact us at: KenyaReptileAtlas@gmail.com. And if you live or travel in Kenya, and find any dead reptiles, please preserve them and take them to the Department of Herpetology, at the National Museum, Museum Hill, Nairobi. Some may object to the preservation of specimens in museums, but it is necessary. Museum specimens can be identified, and used to map the distribution of species within Kenya; this is essential for medical and conservation purposes. Someone trying to list the reptiles of Tsavo National Park, for example, needs to be able to look at preserved specimens in the National Museums of Kenya in order to check that (a) the species is correctly identified, (b) find out where it comes from. The museum – and us – are always pleased to receive specimens. And we also want local reptile stories, legends and local names; indigenous knowledge is a powerful tool towards understanding of how local communities view reptiles.

What if you are looking at a snake, or lizard, and want it identified but don't want to catch it? Take a good digital photograph, with your phone or camera, and send it to us, at the address above. Kenya's reptile fauna is poorly known. Although the National Museum in Nairobi has a good spirit collection, more material is needed. Many areas in Kenya have never even been visited by reptile enthusiasts, let alone surveyed by a professional herpetologist. If you visit an unknown area, or even a well-known area, you may make new discoveries. The museum wants to know about them. For example, a few years ago, the existence of the Mwanza flat-headed agama, *Agama mwanzae*, wasn't even formally recorded in Kenya...and yet they are abundant in the Maasai-Mara National reserve. Another example; we suspect that the dangerous carpet viper, *Echis pyramidum*, is very widely



distributed across northern Kenya. But, apart from a decent set of records around Lake Turkana, it is only known from a handful of records, as detailed in the Vipers 1 download of the atlas. Medical professionals need to know where this snake is found; as it bites a lot of people.

So use our atlas. Download the sections, spread them around, circulate them to all! Inform your friends and colleagues. Keep checking for updates. Knowledge is power! ●