

The Frog That May Be Lost

Another New Species Endemic to the Iwokrama Mountains of Guyana!

Story By Philippe J.R. Kok, Monique Hötting, and Raffael Ernst



The Guyana based organisation Iwokrama International Centre for Rainforest Conservation and Development is an international not-for-profit organisation that was established by the Government of Guyana and the Commonwealth Secretariat. The organisation manages nearly one million acres (371,000 ha) of intact rainforest with the aims of testing the concept of a truly sustainable forest, where conservation, environmental balance and economic use can be mutually reinforcing.

This concept includes sustainable forestry (e.g. Non Timber Forest Products, selective logging) as well as ecotourism. The latter is often hailed as one of the few indisputable examples of sustainable development at work because it is not only compatible with biodiversity conservation but it also generates economic revenue from land set aside for nature protection. Moreover,

ecotourism helps to educate the general public on conservation issues and thereby supports a better management of protected areas. It is therefore not surprising that there is a growing interest in broadening the ecotourism portfolio of Iwokrama by exploring and developing new and attractive sites within the Iwokrama Forest boundaries.

One of these sites that has been identified as having a high potential for attracting ecotourists are the so-called Turu Falls. The area is very peculiar and exceptional compared to other sites within the Iwokrama Forest ecosystem, not the least due to its spectacular topography that features small waterfalls and creeks with pools and cascades. Situated at the foothills of the scenic Iwokrama Mountains it harbours an extraordinary flora and fauna that has only insufficiently been investigated in the past.

Two new vertebrate species have recently been described from the Iwokrama Mountains, a region recently assumed to be an “area of endemism”: one amphibian (the caecilian – a legless amphibian – *Caecilita iwokrama* in 2009), and one reptile (the lizard *Gonatodes timidus* in 2011). Endemism is a term used in biogeography (the study of the geographic distribution of organisms) to characterize the uniqueness to a defined geographic location. In other words, a species that is said to be endemic to the Iwokrama Mountains occurs only there, and nowhere else in the world! These so-



called endemic species are thus of primary importance in terms of conservation, especially when they are highly restricted, but also as flagship species for the areas concerned. When a peculiar region harbours at least two endemic species, it can generally be assumed that their distribution has been affected by the same historical biogeographical factors, and the area is called an area of endemism.

Allobates amissibilis, literally the “rocket frog that may be lost” according to the etymology of its Latin name, is a recent new addition to the list of endemics to the Iwokrama Mountains. This tiny frog (less than 18 mm long) belongs to the family Aromobatidae, which was formerly included in the family of the poison frogs (Dendrobatidae). Frogs of the family Aromobatidae, which also includes *Anomaloglossus beebei*, the well-known golden frog of Kaieteur National Park, notably lack the toxins secreted by “true” poison frogs.

The new species has been discovered at two locations in the Iwokrama Mountains, the first sighting dating back to May 2010, when one of us (Monique Hölting) secured a specimen from Turu Falls while performing preliminary investigations on the potential impact of ecotourism on conservation. About a year later, a second specimen was collected by Philippe Kok (Free University of Brussels and Royal Belgian Institute of Natural Sciences, Belgium) on the summit of one of the highest unnamed peaks of the Iwokrama Mountains, and finally in 2012 additional specimens were recorded at Turu Falls during the field herpetology course taught by Philippe Kok to international

master students studying herpetology at the Free University of Brussels, Belgium. The new species is diurnal and terrestrial, males calling during rainy days to attract females and defend their territory. What is really surprising is that no one noticed this species during the extensive faunal

surveys conducted in Iwokrama during the late nineties, further suggesting that the new species is geographically extremely restricted, and rather uncommon.

What makes endemism in the Iwokrama Mountains so exciting is that it concerns species that are distantly related (lizards for instance are evolutionary closer to humans than to frogs), and researchers are currently trying to understand the historical biogeographical processes involved in that very localized endemism, also called microendemism.

Because it is geographically highly restricted, *Allobates amissibilis* may face threats in the near future as a result of increasing human pressure due to the aesthetic attractiveness of the locality where it occurs. Indeed, development of Turu Falls as an ecotourism site, which, if not planned carefully, could alter this ecosystem substantially and put the long-term viability of these populations at stake, hence the choice of the species Latin name. Another conservation challenge to face!

What exactly is a new species, and why a Latin name?

Actually the term “new species” may be misleading for the general public because these “new” species may have existed well before the emergence of modern humans. They are considered “new” because they were never noticed by scientists before, and therefore were still not scientifically named. Sometimes these species are already known by local populations, and already have a local name, but nowadays they are often discovered in remote areas that are not, or scarcely, populated by humans. Scientific convention is to use binomial Latin, or Latinized, names to designate species (a genus name and a species name), which allows proper identification and classification. Scientists who describe new species are allowed to decide the species name.

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