

Named after Stanley Kubrick, a new species of frog is a 'clockwork orange' of nature

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The newly discovered Devil's Treefrog (*Dendropsophus kamagarini*). Credit: Arturo Muñoz

Two new treefrog species were discovered in the Amazon Basin of Bolivia, Peru, and Brazil. Both had been previously misidentified as another superficially identical species.



Curiously, one of them received a name translating to 'demon' or 'devil'. The second one was named in honor of famous American filmmaker Stanley Kubrick, because of his masterpiece A Clockwork Orange.

Having conducted analyses of genetic, morphologic, and bioacoustic data, scientists C. Daniel Rivadeneira, Dr. Pablo J. Venegas, and Dr. Santiago R. Ron concluded that the amphibians represented two previously unknown <u>species</u> that used to go by the name of the Sarayacu treefrog (Dendropsophus parviceps).

As a result of this research collaboration between Ecuador's Catholic University (PUCE) and Peru's Centro de Ornitología y Biodiversidad (CORBIDI), the treefrogs were recently described as new to science in the open access journal *ZooKeys*.

The scientists remind that, back in 1972, when Anthony Burgess explained the title of his famous novel A Clockwork Orange, he said: "I've implied the junction of the organic, the lively, the sweet - in other words, life, the orange - and the mechanical, the cold, the disciplined (...)"





The newly discovered Kubrick's Treefrog (*Dendropsophus kubricki*) showing its bright-orange stains. Credit: Pablo Venegas

"Without knowing, he was also giving a good metaphor to describe ecosystems," comment the researchers. "Nature works as the interplay between life and its cold, mechanical, and disciplined physical matrix."

Furthermore, both new frogs, scientifically listed as *D. kubricki* and *D. kamagarini*, are characterized by having a bright orange blotch on the shanks, reminiscent of the 'orange pieces of nature'.



On the other hand, the species name kamagarini refers to 'demon' or 'devil', as per its translation from the Matsigenka language spoken in southeastern Peru. One of the characteristic features of the new species *D. kamagarini* are namely its horn-like protuberances on the upper eyelids.



The previously known Sarayacu Treefrog that the newly described species used to be both misidentified with. Credit: Santiago Ron, BIOWEB Ecuador

Amphibians are important pieces in ecosystems as secondary consumers in food chains. They also play a significant role in decomposition and nutrient cycling.



Stanley Kubrick - arguably one of the most brilliant and influential film directors of all time - left an immemorial legacy in cinema. His masterpiece, A Clockwork Orange (1971), was based on Anthony Burgess's 1962 novel of the same name.

More information: Daniel Rivadeneira et al, Species limits within the widespread Amazonian treefrog Dendropsophus parviceps with descriptions of two new species (Anura, Hylidae), *ZooKeys* (2018). <u>DOI:</u> 10.3897/zookeys.726.13864

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