

New to science New Zealand moths link mythological deities to James Cameron's films

June 11 2019



The newly described moth species *Arctesthes avatar* in its natural habitat (South Island, New Zealand). Credit: Brian Patrick

In an unexpected discovery from the South Island (New Zealand), two

species of narrowly distributed macro-moths were described as new species. Interestingly, both *Arctesthes titanica* and *Arctesthes avatar* were named after mythological deities and top-grossing blockbusters by famous filmmaker James Cameron: *Titanic* and *Avatar*, respectively.

Each of the newly described species are believed to be restricted to only a couple of subalpine/alpine localities. Therefore, they are particularly vulnerable to extinction and need to be "considered of very high priority for conservation", point out New Zealand scientists Brian Patrick (Wildland Consultants Ltd), Hamish Patrick (Lincoln University) and Dr. Robert Hoare (Manaaki Whenua-Landcare Research) in their paper in the open-access journal *Alpine Entomology*.

Because of its relatively large size, one of the new discoveries: *A. titanica*, was named in reference to the Titans: the elderly gods in Greek mythology and the legendary, if ill-fated, record-breaking passenger ship 'Titanic', which became the subject of the famous 1997 American epic romance and disaster film of the same name. Unfortunately, the moth's small wetland habitat is located in an area that is currently facing a range of damaging [farming practices](#), such as over-sowing, grazing, stock trampling and vehicle damage.

On the other hand, *A. avatar* received its name after Forest & Bird, the New Zealand conservation organisation that was behind the 2012 BioBlitz at which the [new species](#) was collected, ran a public competition where "the [avatar](#) moth" turned up as the winning entry. The reference is to the indigenous people and fauna in *Avatar*. Just like them, the newly described moth is especially vulnerable to habitat change and destruction. In addition, the study's authors note that the original avatars came from Hindu mythology, where they are the incarnations of deities, including Vishnu, for example, who would transform into Varaha the boar.



Male (left) and female (right) specimens of the newly described moth species *Arctesthes titanica*. Credit: Birgit Rhode

In conclusion, the scientists point out that [future studies](#) to monitor and further understand the fauna of New Zealand are of crucial importance for its preservation:

"Quantitative studies as well as work on life histories and ecology are particularly needed. Already one formerly common endemic geometrid species, *Xanthorhoe bulbulata*, has declined drastically and is feared possibly extinct: its life history and host-plant have never been discovered. Without further intensive study of the fauna of modified and threatened New Zealand environments, we will be unable to prevent other species slipping away."

More information: Brian H. Patrick et al, Review of the endemic New Zealand genus *Arctesthes* Meyrick (Lepidoptera, Geometridae, Larentiinae), with descriptions of two new range-restricted species, *Alpine Entomology* (2019). [DOI: 10.3897/alpento.3.33944](https://doi.org/10.3897/alpento.3.33944)

Provided by Pensoft Publishers

Citation: New to science New Zealand moths link mythological deities to James Cameron's films (2019, June 11) retrieved 23 April 2024 from <https://phys.org/news/2019-06-science-zealand-moths-link-mythological.html>

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