

Citizen scientists discover six new species of beetles in Borneo

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One of the newly discovered beetle species, *Dermatohomoeus maliauensis*.
Credit: Taxon Expeditions, Menno Schilthuizen

Scientists estimate that 80% of the world's animal and plant species are still unknown. Although the work of taxonomists (whose job is to describe and name those) is appreciated by the general public, funding for taxonomy is dwindling. Moreover, while the areas hosting most of the unknown biodiversity are under threat, time is running out.

To help solve this problem, [Taxon Expeditions](#) has become the first organisation in the world to initiate field courses for [citizen scientists](#) in biodiversity hotspots, with the aim of discovering, describing, naming, and publishing [new species](#) under the slogan "You can be Darwin too".

"Relying on extra hands means that unknown [species](#) can be discovered faster and," says Taxon Expeditions director and biologist Dr. Iva Njunjic, "for some of that work, you don't even need to be a trained taxonomist."

Taxon Expedition's first field course to the remote 30-kilometre-wide [Maliau Basin](#) in Malaysian Borneo, yielded six new species. Three of those, all tiny beetles living in rainforest leaf litter, are published today in the *Biodiversity Data Journal*. The other three, belonging to the family Elmidae (riffle beetles) will be published next year.

Citizen scientists discovered these species during a field exercise employing the method of 'Winkler extraction'. Using this technique, dead leaves are collected from the rainforest floor before being sieved, so that hundreds of tiny soil-dwelling insects can be revealed.

Professor Menno Schilthuizen recognised three of those as new species. Under his guidance, the participants studied, photographed and drew the specimens in the expedition's field lab, extracted their DNA and finalised a draft ready for publication.

The participants also came up with the original names for the three new species. English teacher Sean Otani from Japan decided to name *Colenisia chungii* after Malaysian entomologist Arthur Chung. The names for *Clavicornaltica sabahensis* and *Dermatohomoeus maliauensis* referring to the studied sites were suggested by staff and rangers of Maliau Conservation Area during the farewell party for the course.

All collected samples are deposited in the insect collection of [Universiti Malaysia Sabah](#) and the rest of the results - in online databases. This way, these discoveries will help other biologists working on Borneo's biodiversity.



Taxon Expeditions participants in the rainforest of Maliau Basin, collecting insects with a so-called blacklight trap. Credit: Taxon Expeditions - Iva Njunjic

In March 2018, Taxon Expeditions will again head for Maliau Basin with a new group of participants, hopefully discovering more new species for science. Meanwhile, this year's team look back on having contributed to real scientific discoveries.

"I had no idea how different, how exciting, how interesting it was going to be. It has been an amazing experience," says retired corporate account manager Mary Erickson from Canada.

More information: Menno Schilthuizen et al, Three new minute leaf litter beetles discovered by citizen scientists in Maliau Basin, Malaysian Borneo (Coleoptera: Leiodidae, Chrysomelidae), *Biodiversity Data Journal* (2017). [DOI: 10.3897/BDJ.5.e21947](https://doi.org/10.3897/BDJ.5.e21947)

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