

# Amber reveals ecology of 30 million year old spiders

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Scientists at The University of Manchester and the Manchester Metropolitan University have carried out the first comparative scientific study of ancient spiders trapped in amber more than 30 millions years ago.

The study of fossilised spiders from the Baltic (Poland) and the Dominican (Caribbean) regions has revealed new insights into the ecologies of spiders dating back to the Cenozoic period.

It is the first time ancient spiders from different parts of the world have been compared on such a large scale. 671 species of spiders were compared in the study which is published in the March issue of the Royal Society's Journal Biology Letters.

Palaeoarachnologist Dr David Penney, of The University of Manchester's School of Earth, Atmospheric and Environmental Sciences who led the research, said: "Amber provides a unique window into past forest ecosystems. It retains an incredible amount of information, not just about the spiders themselves, but also about the environment in which they lived.

"We have not only been able to compare the size distributions of over 600 spiders but we have also been able to gain unique insights into the forest in which they lived."

By analysing the size distributions of the spiders and comparing the

distinct hunting traits of each species, Dr Penney found that web-spinning spiders were bigger in Baltic amber than in Dominican amber, but that there was no difference between hunting spiders in either region. It was also found the fauna of the amber producing trees in each region accounted for this difference in size.

"Several lines of evidence show that greater structural complexity of Baltic compared to Dominican amber trees explains the presence of larger web-spinners. The Dominican trees are long, thin and smooth whereas the Baltic trees are wide and bushy, providing a much better environment for web-spinners to prosper," says Dr Penney.

The study demonstrates for the first time that spiders trapped in amber can be scientifically compared across deep time (30 million years). This is due to the fact that until now it was unknown whether the amber resins were trapping organisms uniformly. This study proves they were.

Source: University of Manchester

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