Asian paper wasp nests found to have bright green fluorescence

August 25 2021, by Bob Yirka

A team of researchers with members from Sorbonne Université, the

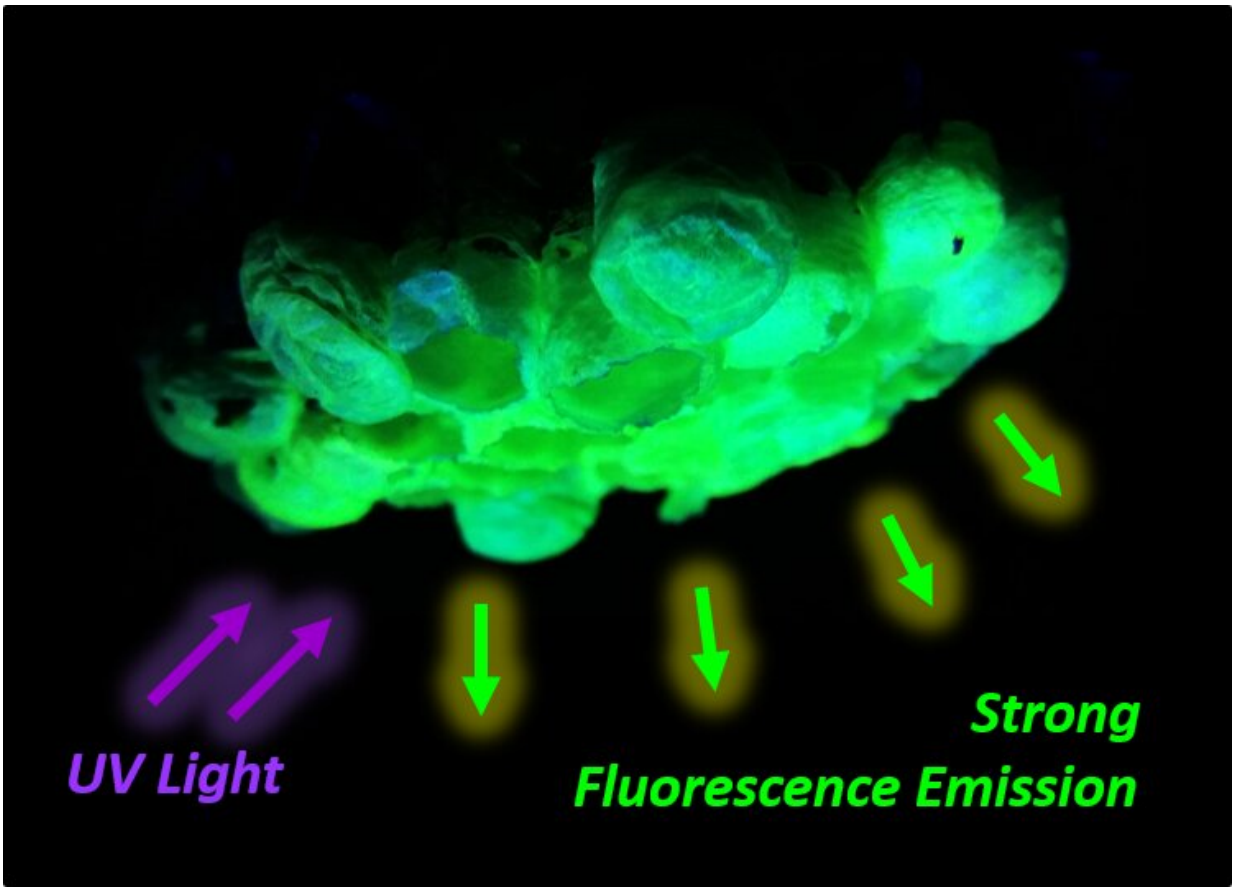
Vietnam Academy of Science and Technology and Université de Paris, has found that the nests of multiple species of Asian wasps display bright green fluorescence under a UV lamp. In their paper published in *Journal of the Royal Society Interface*, the group describes their harrowing treks through multiple North Vietnamese tropical forests at night and what they found.

Many types of animals display fluorescence on parts of their bodies, including fish, scorpions, chameleons and turtles. Less common is fluorescent material created by an organism. In this new effort, the researchers have found evidence of biofluorescence (when living material absorbs light and then re-emits it at a new wavelength) in the nests of wasps living in North Vietnam.

The researchers began their work by noting that some naturally occurring materials with biofluorescence have found use in human applications. They wondered if any such material might be created by creatures living in the tropical forests of North Vietnam. Finding out was rather simple—the team simply wandered around in forests, shining UV lamps all around them. But they had to do it at night to spot fluorescence, and that meant taking extreme cautionary measures to avoid being bitten or stung by the many dangerous creatures that inhabit these areas, including snakes, spiders and wasps.

The researchers came upon paper wasp nests that glowed bright green under the lamps. The nests are built by the wasps in a hexagonal or honeycomb fashion and glowed under the lamps with the caps on each hexagon glowing the brightest. More searching showed the fluorescence in three other species of the wasp as well.

Once they found the fluorescence, the researchers pondered its purpose. They note that prior research with other creatures has found that fluorescence can serve as a beacon, showing the way home for individuals that find themselves out at night. They also note that other studies have shown that biofluorescent materials can be used as a means of protecting larvae growing in the nest from harsh sunlight.



More information: Willy Daney de Marcillac et al, Bright green fluorescence of Asian paper wasp nests, *Journal of The Royal Society Interface* (2021). DOI: 10.1098/rsif.2021.0418