ADVENTURE-EXPEDITION-AMAZON-SCIENCES-ARCHAEOLOGY-DRONE-TECH-ARTIFICIAL INTELLIGENCE

Drones & AI to search for explorer Percy Fawcett's Lost City

For a long time, the Amazon rainforest has been considered unsuitable for human habitat. Now a high-tech expedition is attempting to find evidence of a lost civilization while following the footsteps of the famed British explorer who mysteriously disappeared in the Amazonian jungle.

With the help of modern technology - robotics, laser detection and artificial intelligence, Benoit Duverneuil and Pierre-Antoine Rousset, two explorers specialized in data sciences are preparing an ambitious expedition in Mato Grosso, Brazil, set to be launched in 2019. Their mission? Collecting scientific evidence of the presence of an ancient civilization in the heart of the Amazonian forest.

A little bit of History. In 1541, a Spanish conquistador, Francisco de Orellana explored the Amazon river looking a legendary city, El Dorado. He failed to find the fabled kingdom but his chronicler wrote about a civilization they met during their journey including large population centers.

In 1925, somewhere in the current Brazilian State of Mato Grosso, the British explorer Percy Fawcett (1867-1925) disappeared in the Amazon rainforest while looking for what he called the Lost City of Z.

A MYSTERY TO SOLVE
About a century later, we still don't know what happened to Fawcett and his group (his son and his friend). A new expedition led by French explorers, Benoit Duverneuil and Pierre-Antoine Rousset, will attempt to retrace the footsteps of the famous British colonel and will investigate his claims with the help of new technology.

Fawcett affirmed having seen man-made topographical features and ceramics but until recently most scientists have considered that the Amazon rainforest was not suitable to be the home to large populations.

The work of scholars such as archaeologist Michael Heckenberger (University of Florida), geographer William Denevan (University of Wisconsin-Madison), and satellite imagery expert Jonas Gregorio de Souza (University of Exeter) is now popularizing the idea that a large network of settlements might have been established centuries before the arrival of Europeans in South America.

According to Benoit Duverneuil who has previously led expeditions in the equatorial forest and in the Andean mountains, "it is quite possible that many archaeological sites are overgrown with trees and the region was occupied by earth-building cultures living in fortified villages. Deforestation combined with field expeditions and satellite data have help finding evidence of geometrical earthworks, trade routes, manmade channels, fertile agricultural lands and more"

HI-TECH EXPLORERS
Under the patronage of the non-profit organization La Condamine, this upcoming expedition is planning to deploy a multi-scale research program involving satellite imagery, UAVs (drone technology), LIDAR (laser sensors) and machine learning (artificial intelligence) to collect data and locate signs of past human activities.

"We will use LIDAR to look for topographical anomalies and near-infrared sensors to confirm the presence of the fertile "terra preta de índio", a dark nutrient-rich earth that satellites have spotted in the same area were Fawcett has disappeared which is really exciting," tells Pierre-Antoine Rousset, the other expedition member.

The two explorers are also planning to rely on Image recognition technology powered by a powerful algorithm and statistics. This artificial intelligence (A.I.) will then compare and categorize the canopy to predict where unexplored fertile lands might be located. Finally, the team will proceed with on-site surveys of a selection of sites to validate the results.

A PERILOUS ENTERPRISE

The unsupported expedition will debut in late 2019. Such enterprise is often dangerous but the intrepid duo has already successfully survived to several treks in the Ecuadorian Andes and the Amazonian rainforest. The logistics are both complex and costly. The attempt is uncertain, huge parts of the Amazon are still unexplored and it is easy to get lost. Additionally, rivers are dangerous to cross, infectious risks are serious, and the wildlife and an extreme climate are also real dangers for the expedition. Dangers that might have been fatale to Fawcett's party. Colonel Fawcett's disappearance was chronicled by David Grahan in his best seller The Lost City of Z which later became a movie produced by Brad Pitt and released in 2017.

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La Condamine is a French non-profit created to support, organize and foster scientific exploration. The NGO has been named after Charles-Marie de La Condamine (1701-1774), a French explorer, mathematician, and geographer. He was sent to South America in 1735 to calculate the diameter of the Earth.
www.lacondamine-exploration.org

DroneArchaeology.com | ADAP (Aerial Digital Archaeology & Preservation) is a research group that has been pioneering the field of drone archaeology and Artificial Intelligence since 2007. The organization offers on-site and online courses to Cultural Heritage students & professionals.
www.dronearchaeology.com

Benoit Duverneuil is a French-American explorer, data scientist, and speaker.
Founder of A.D.A.P and vice-president of La Condamine, he is also a board member and director of technology at the oceanographic foundation Taras located in Jupiter, FL. For a decade he has been exploring some of the most remote and extreme areas of the globe experimenting the use of technology applied to archaeology, wildlife conservation, and humanitarian crisis.

Pierre-Antoine Rousset is a French engineer. After several years of study in the Amazonian rainforest, he specialized in the field of mineral exploration and has led several missions in Zimbabwe and West Africa. He serves as President of the non-profit organization La Condamine which aims to promote Exploration Science.

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