



Exhibition / Documentary

SKY ISLANDS

WHAT IF DARWIN HAD BEEN A MOUNTAINEER ?

An exhibition and a documentary to explore high altitude Alpine plants

Museum de Grenoble (Dolomieu street)

Inauguration on Thursday, 5 October 2017

Exhibition from 06/10/2017 to 31/08/2017

Press kit on request
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Having resisted numerous ecological crises, flowering plants have colonised a great variety of communities, from oceanic islands to high elevation habitats. High Alpine summits appear as harsh environments to the development of life and yet a number of plant species have colonised them, adapting to living conditions among the most extreme on the planet. On these “sky islands”, water is scarce, the wind is chilling and solar radiation is crushing. How did such tiny flowers manage to reach the bare summits and survive?

Secluded in altitudes inaccessible to scholars until then, high summits began to be explored in the 18th c., which led to their sampling and to their scientific study. Then started a true scientific adventure... You will discover it through surprising plants in the exhibition and the documentary both entitled “Sky Islands. What if Darwin had been a mountaineer?”

During the 1990s, the study of the plants living at high elevations, including the ones from the Alps and the Andes, enjoyed a new boom with the development of research projects based upon the most recent technologies, specifically in genetics.

The exhibit and the documentary “Sky islands” invite all the curious audiences, whether kids or parents, laymen or experts, to discover the current explorations of the high summits by scientists and to understand how their work allows a better grasp of the evolution of plants throughout the world.

« Is the secret to evolution hidden on the summits of the mountains ? »



THE EXHIBITION - THE EXPLORATION OF MOUNTAINS OF THE ALPS BY NATURALISTS

Darwin put forward a theory of evolution that led to the publication of his major work from 1859 "On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life". The most significant part of his work is dedicated to plants: 6 books and over 70 articles. Yet it is in this very field that Darwin has met what he called, in his own words, an "abominable mystery". The fossils discovered in the 1860s and 1870s hint at a first appearance and a sudden diversification of flowering plants during late Cretaceous (100 - 60 Ma). This discovery was then in contradiction with his theory of evolution, which assumed a slow and gradual evolutionary process. Thanks to modern genetics contributions, we now know that the appearance rate of new species can vary greatly in time, which doesn't invalidate Darwin's theory of natural selection.

« A trip to trace high altitude plants, nestled on scree slopes, clinging to the cliffs and subjected to the harshest living conditions on earth. »

Scientific experts:

- > Sébastien Lavergne, researcher for the CNRS Laboratoire d'Ecologie Alpine de Grenoble
- > Cédric Dentant, botanist at Ecrins National Park
- > Joëlle Chiche and Matthieu Lefebvre, curators of the exhibition, scientific department of the Muséum de Grenoble

THE DOCUMENTARY - WHAT IF MOUNTAIN PLANTS WERE MOVIE STARS ?

The documentary "Sky Islands" illustrates the critical role of exploration in the building of knowledge. By taking as a starting point the great works of the 19th century naturalists, it recalls us too that science is in perpetual motion. How do living creatures react to changes in their environment? Will these highly adaptative plants be really threatened by the coming ecological crises? Transported on the highest summits of the French Alps, in the Ecrins and Mont Blanc mountains, the viewer follows a team of botanists in search of three alpine flowers on wild slopes, little known by both public and community. The presence of an opportunity remarkable whose work paleoglaciology and sociology of sciences allow to better understand the developments of the Alpine environment in the past 20.000 years. The documentary reviews the history of Alpine exploration to help us connect the theory of evolution and its recent advances. The viewer enters the research labs, explores the genetics of these plants to figure the strategies chosen by the species to adapt to contrasted and varying environments.

« 3 500 m in elevation, researchers hunt flowers's genetical information to recount the path of life »

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52'

Filmmaker :

- > Olivier Alexandre / Nomades Production.

Interviewees :

- > Sébastien Lavergne, researcher at the CNRS LECA
- > Cédric Dentant, botanist at Ecrins National Park, expert on the history of the Alpine conquest
- > Hanna Marx, thesis student in ecology at the University of Idaho (US), at the origin of the concept of "sky islands"
- > Philip Deline, professor at the Université de Savoie, expert on glacier dynamics.
- > Sylvain Coutterand, cassociate researcher at the Laboratoire EDYTEM, Université de Savoie, expert on glacier variations and major glaciations
- > Julien Carcaillet, research engineer, CNRS, at the Institut des Sciences de la Terre, Grenoble
- > Peter Van Der Beek, professor at the Université Grenoble Alpes, geologist

ILS SONT PARTENAIRES DE L'EXPO ET DU DOCUMENTAIRE «LES ÎLES DU CIEL»

The Muséum de Grenoble

The City of Grenoble preserves and promotes the natural heritage and the biodiversity through its Muséum. As the fourth Muséum in France, it assists naturalists and all those who act upon natural world conservancy by carrying out the inventory of the flora and fauna. Its botanical and entomological collections consist of tens of thousands of specimens from the Isère department, upon which are based scientific publications that are essential to the study of ecosystems. As a key actor regarding nature awareness, the Muséum de Grenoble welcomes over 100.000 visitors per year by putting together cultural and educational events.

www.museum-grenoble.fr

The Department of Isère

For several years already, the Council of the Department of Isère has been developing an ambitious and exemplary conservancy policy for its natural heritage. Through strategies like the master plan for the sensitive natural areas (Espace Naturels Sensibles) of Isère and the department's programme on biodiversity, the Council manages the protection of animal and plant species and habitats of Isère. In this capacity, one of the main objectives is to circulate a consolidated and up-to-date knowledge on these ecosystems of the department.

www.isere.fr

Ecrins National Park

Following the short-lived Berarde National Park in 1913, the official creation of Ecrins National Park only occurred in 1973, at the instigation of alpinists, naturalists groups and the Club Alpin Français, and with the support of MP and mayor Paul Dijoud. Ecrins National Park is one of the ten national parks in France, namely Vanoise, Port-Cros, Pyrénées, Cévennes, Mercantour, Guadeloupe, Reunion, Guyane and Calanques, but it is above all one of the largest natural areas in Europe. A highly original scientific programme focused on vertical ecology is conducted within the park.

www.ecrins-parcnational.fr

The Laboratoire d'Ecologie Alpine (LECA)

The LECA is a research laboratory combining researchers from the CNRS, Grenoble-Alpes University and Savoie University. The goal of the LECA is to unravel the driving mechanisms of alpine ecosystems and the dynamics of their biodiversity. The LECA seeks to predict the response of the alpine environments to changes using the concepts and methods of disciplines such as ecology and evolutionary biology.

www-leca.ujf-grenoble.fr

Nomade Production

Born in 1998 from a yearning to create documentary films for TV, Nomade Production is managed by Marc Toper and endeavour to link projects quality and compelling topics. Today, the team's experience allows Nomade Production to offer a catalogue of rich and sterling documentaries on the world of mountain (culture, heritage, research, sports), human adventure, and of live concert recordings, with broadcasting partners such as Arte, Canal +, France Televisions, France 3 Region Rhone Alpes Auvergne, France 3 Corse and France 5.

www.nomadeprodfilm.com

