

**6th INTERNATIONAL SCIENCE FILM
FESTIVAL OF ATHENS**

OFF COMPETITION

1. All about glue

Original Title: All about glue

Duration: 15'

Producer: CNRS Images

Director: Céline Ferlita

Company: CNRS Images

Scientific Field: Material Sciences/ Exact Sciences/ Technologies

Year: 2010

Country: France

Glue doesn't only exist in our daily life: It's also an unknown scientific problem. The idea of this film is to make people rediscover something as banal as glue, which is the object of important questionings. A researcher in mechanics, a chemist and a physicist explain its mechanisms.

2. Chilies to the rescue! Easing the human-elephant conflict

Original Title: Chilies to the rescue! Easing the human-elephant conflict

Duration: 51'

Producer: Annette Scheurich

Director: Herbert Ostwald

Company: Marco Polo Film AG

Scientific Field: Biology/ Agriculture/ Environment/ Wildlife

Year: 2010

Country: Germany

Africa is reporting a rise in elephant numbers. At the same time the population of humans is growing. Man and elephant require space. Conflicts between both are unavoidable and the battle between humans and elephants is getting more grisly and costlier. Conservationists and gamekeepers of Africa are researching new methods to manage the jumbos: especially chili peppers seem very promising as the elephants' long trunks are very sensitive to the hot spice. But the question remains: Is there any chance for a permanent and peaceful coexistence of humans and elephants? How many elephants can the African continent handle?

3. Golem Grad: The reptiles' island

Original Title: Golem Grad: L'île aux reptiles

Duration: 27'

Producer: CNRS Images

Director: Luc Ronat

Company: CNRS Images

Scientific Field: Biotopes/ Biodiversity/ Environment/ Wildlife/ Genetics/ Nature

Year: 2010

Country: Γαλλία

Golem Grad is a mysterious island in Macedonia where two fascinating and quite unique phenomena have occurred: the appearance of a new type of dice snake and of a population of homosexual turtles. For ten days, an international team of scientists carries out extensive tests and experiments to try and explain the mysteries of this exceptional ecosystem.

4. Inside tetrapak

Original Title: Tetrapak

Duration: 8'

Producer: Patrice Goldberg

Director: Felice Gasperoni & Patrice Goldberg

Company: RTBF

Scientific Field: Technologies/ Environment/ Experimental sciences

Year: 2010

Country: Belgium

Quel est le point commun entre du lait, de la soupe et du jus de fruit (voire du vin parfois)? Evidemment ils sont tous liquides mais ce n'est pas tout: ils sont aussi souvent stockés dans des paquets en carton. Ces petites (ou grandes) boîtes nous sont tellement familières que nous ne nous demandons jamais d'où elles viennent et comment elles sont fabriquées. De fait, on ne se rend pas compte à quel point il s'agit de petits bijoux technologiques, capables non seulement de transporter et de stocker des aliments mais aussi, et surtout, de les protéger de toute attaque microbienne, de la production jusqu'à la consommation finale. Oui mais, pour fabriquer des milliards de paquets en carton, vendus dans le monde entier, il faut forcément énormément de bois. Pourtant, grâce à une gestion intelligente des forêts, les arbres utilisés pour la production ont paradoxalement tendance à se multiplier!

5. **Leptis Magna: Rome in Africa**

Original Title: Leptis Magna: Un rêve de Rome en Afrique

Duration: 52'

Producer: SEPPIA

Director: Baudouin Koenig

Company: SEPPIA

Scientific Field: Archeology/ Culture/ Anthropology

Year: 2010

Country: France

All white and pink marble with water flowing freely, Leptis Magna revealed the wealth of Rome and constantly flaunted its power to the peoples of Africa. It was covered by the desert sands until the 20th century. New archeological discoveries are opening new perspectives to understand the rise and the sudden fall of the third biggest city of the Roman Empire...

6. **Life in hell: Survivors of darkness**

Original Title: Life in hell: Survivors of darkness

Duration: 52'

Producer: Thierry Berrod

Director: Thierry Berrod

Company: Mona Lisa Production

Scientific Field: Extromophiles/ Environment/ Nature/ Wildlife

Year: 2010

Country: France

In these environments, micro-organisms rule. Certain animals have strange adaptations such as skin that is totally white or even transparent. Others are blind. Scientists are studying how these species manage to survive with so little oxygen, food and light in the most inhospitable caves on the planet. The Movile Cave in Romania is without a doubt the most extreme subterranean environment on Earth. Its isolation for several millions of years has led to the creation of a special microcosm. In certain parts of the cave, the concentration of hydrogen sulphate is 100 times that of the air we breathe. And yet in this Hell, thanks to the action of certain microbes, a rich ecosystem has developed. In Mexico, in another tiny underground microbial paradise, there flows a stream that is almost an opaque white, and yet a curious species of fish lives in it. This fish has developed strategies for living in water saturated with hydrogen sulphate. In Slovenia, a mysterious creature, the proteus, has human-like skin, pink and transparent. It manages to survive without food for many months; it is even capable of

eating its own tissues. So as not to use too many calories, it has only 3 digits. All these adaptations, these strategies, have enabled life to develop in extreme conditions. The species encountered are constantly interacting with each other. A remarkable equilibrium, extremely fragile and often unimaginable, is the result.

7. Lokomat

Original Title: Lokomat

Duration: 8'

Producer: Patrice Goldberg

Director: François Gonce & Patrice Goldberg

Company: RTBF

Scientific Field: Health/ Medicine/ Experimental sciences

Year: 2010

Country: Belgium

Pour les victimes d'accident qui ont provisoirement perdu l'usage de leurs jambes, marcher à nouveau est un vrai défi. Quand ils y parviennent, c'est souvent au prix d'une longue et épuisante rééducation. Mais aujourd'hui, une machine créée par des ingénieurs suisses leur redonne espoir. Sorte de squelette externe, elle permet d'effectuer des progrès spectaculaires...

8. Lotus: From spirituality to hi-tech, The

Original Title: The lotus: From spirituality to hi-tech

Duration: 53'

Producer: CNRS Images

Director: François-Xavier Vives

Company: CNRS Images

Scientific Field: Environment/ Nanotechnology/ Technologies/ Exact Sciences/ Nature

Year: 2010

Country: France

The lotus, eternal symbol of purity and spiritual elevation, is nowadays the emblem of a technological revolution. The lotus has always had a great power of fascination, especially because of the surprising hydrophobic property of its leaves: by repelling water, they remain immaculate. When researchers finally pierced the secret of this "lotus effect", a whole new scientific field opened up before them: bionics. A science that looks into nature to create new technologies. From the Botanical Institute of Bonn to the University of Tokyo, from the Lotus Temple in New Delhi to the laboratories of the CNRS in France, researchers, botanists and architects reveal to us the singularities of the lotus and reflect on how plants can offer solutions to contemporary issues...

9. **Making stuff: Cleaner**

Original Title: Making stuff: Cleaner

Duration: 60'

Producer: Chris Schmidt

Director: David Huntley

Company: WGBH Educational Foundation

Scientific Field: Technologies

Year: 2011

Country: USA

Can innovations in materials science help clean up our world? In *Making stuff: Cleaner*, David Pogue explores the rapidly developing science and business of clean energy and examines alternative ways to generate it, store it, and distribute it. Is hydrogen the way to go? What about lithium batteries? Does this solve an energy problem or create a new dependency? Pogue investigates the latest developments in bio-based fuels and in harnessing solar energy for our cars, homes, and industry in a program full of the stuff of a sustainable future.

10. **Making stuff: Smarter**

Original Title: Making Stuff: Smarter

Duration: 60'

Producer: Daniel McCabe

Director: Daniel McCabe

Company: WGBH Educational Foundation

Scientific Field: Technologies

Year: 2011

Country: USA

Making Stuff: Smarter looks at materials that respond to their environments and even learn, such as an airplane wing that changes shape as it flies. Scientists are turning to nature in developing such "smart" stuff. Sharkskin, for instance, has inspired a substance that, when

sprayed in hospitals, could eliminate antibiotic-resistant bacteria. David Pogue visits a scientist who has even created a material that can render objects invisible. *Smarter* concludes with a vision of the ultimate in "life-like" stuff: programmable matter that could create a duplicate of a human being.

11. Making stuff: Stronger

Original Title: Making Stuff: Stronger

Duration: 60'

Producer: Chris Schmidt

Director: Chris Schmidt

Company: WGBH Educational Foundation

Scientific Field: Technologies

Year: 2011

Country: USA

What is the strongest material in the world? Is it steel, Kevlar, carbon nanotubes, or something entirely new? NOVA kicks off the four-part series *Making stuff* with a quest for the world's strongest substances. Host David Pogue takes a look at what defines strength, examining everything from steel cables to mollusk shells to a toucan's beak. Pogue travels from the deck of a U.S. naval aircraft carrier to a demolition derby to the country's top research labs to check in with experts who are re-engineering what nature has given us to create the next generation of strong stuff.

12. Mystery files: Alexander the Great

Original Title: Mystery files: Alexander the Great

Duration: 26'

Producer: Ben Mole

Director: Ben Mole

Company: Parthenon Entertainment Ltd.

Scientific Field: Culture/ Anthropology

Year: 2011

Country: United Kingdom

Alexander the Great is world-famous for being the military genius who conquered the known world. But to many people of antiquity he was far more important and powerful than a mere general. He was a god. After his death, his body became one of the most sacred objects in history. Pilgrims, from the common man to the most powerful emperors, visited and knelt before the remains of their god-King. And then in the space of a generation, all trace of his tomb simply disappeared. What happened to Alexander's body? Was it destroyed by a tsunami? Did Christians intent on stamping out all trace of other religions destroy it? Or, as one historian believes, does it still exist, renamed and venerated as a saint in one of the most glorious Christian basilicas in the world? Compelling evidence for the common practise of Pagans converting not just their temples, but even their tombs to Christian use are common in

late antiquity. Alexandria changed from being the pagan, Greek city of Alexander to a Christian city with St Mark as its patron saint. Did the local population simply rename Alexander's tomb as Mark's? Did one of the great conquerors of the Ancient World end up buried in St Mark's Basilica in Venice?

13. **Mystery files: Captain Kidd**

Original Title: Mystery Files: Captain Kidd

Duration: 26'

Producer: Kate Haddock

Director: Kate Haddock

Company: Parthenon Entertainment Ltd.

Scientific Field: Culture/ Anthropology

Year: 2011

Country: United Kingdom

Captain William Kidd is one of the most famous pirates in history. Tales of his cunning and his riches have spread over the centuries since his trial and execution in 1701. In more recent times, scholars have become polarized into those who thought he was wrongfully convicted and those who are convinced of his piratical actions. Detailed examination of the events that lead to Kidd's death, reveal a plot that reaches all the way to the king himself and government deals with a powerful global corporation. Six years earlier, Kidd is a reputable sea captain with a New York society wife. His fall from grace starts when he takes up an English commission as a privateer to capture French ships and pirates. He sails to the Indian Ocean to complete his task. In two years, he seizes three ships, but also gains a reputation as the most wanted pirate on the seas. His trial centres on the taking of one ship in particular and vital defense documents are missing at trial, potentially deliberately concealed... Is there a secret government conspiracy to scapegoat the innocence Captain Kidd or is he guilty of piracy and murder?

14. **Mystery files: Lawrence of Arabia**

Original Title: Mystery files: Lawrence of Arabia

Duration: 26'

Producer: Kate Haddock

Director: Kate Haddock

Company: Parthenon Entertainment Ltd.

Scientific Field: Experimental sciences

Year: 2011

Country: United Kingdom

Lawrence of Arabia is seen by some as a military genius during World War I; and by others as one of the greatest liars and charlatans of the 20th century. For decades, academics and amateurs alike have argued over the truth of T.E. Lawrence's writings, his claims of Turkish brutality and most importantly, his role in the making of military history. New and unique evidence from cutting-edge archaeological investigation has now settled this debate once and for all.

15. Mystery files: Marco Polo

Original Title: Mystery Files: Marco Polo

Duration: 26'

Producer: Ben Mole

Director: Ben Mole

Company: Parthenon Entertainment Ltd.

Scientific Field: Culture/ Anthropology

Year: 2011

Country: United Kingdom

Marco Polo is famous for being an Italian explorer, the first westerner to go to China, and for bringing spaghetti back to Europe. But in fact Marco Polo was just one of many to make the trip to China by the Thirteenth Century and the famous account of his travels wasn't even originated by him but by an Italian writer famous for his fantasy stories. Not only that, the book has grown over the centuries, with whole chapters being added over the years. So how much of the book can we believe, and can we even be sure that Marco Polo even made such a trip? We reveal that despite the book suggesting he spent 20 years in the court of the Chinese emperor, there is no mention of Marco in Chinese records. Marco Polo's last will and testament remains unsigned and even the inventory of his possessions made on his death has question marks hanging over it. Our experts examine all the best evidence. Did Marco Polo, or any European, travel so far into China so long ago? Are the famous tales really based on Marco Polo's travels? And did a man named Marco Polo even exist?

16. Mystery files: Pope Joan

Original Title: Mystery files: Pope Joan

Duration: 26'

Producer: Marc Tiley

Director: Marc Tiley

Company: Parthenon Entertainment Ltd.

Scientific Field: Culture/ Anthropology

Year: 2011

Country: United Kingdom

The legend of Pope Joan, the female pope, has endured for centuries. Some medieval chronicles record that there once was a pope who was in fact a woman. She had 'taught the liberal arts, was talented and proficient in a diversity of branches of knowledge'. She wore the Holy robes for over two years before her deception was finally, and dramatically, revealed by giving birth in public, on a street in Rome. Her life was never doubted in the middle ages, and her story survived through the Reformation and in to the 21st century. But could a woman really have become Bishop of Rome? Retracing her footsteps, and searching through the archives, we investigate the mystery of Pope Joan.

17. **Mystery files: Saladin**

Original Title: Mystery files: Saladin
Duration: 26'
Producer: Mark Westcott
Director: Mark Westcott
Company: Parthenon Entertainment Ltd.
Scientific Field: Culture/ Anthropology
Year: 2011
Country: United Kingdom

The name of Saladin will always have to it a near-mythical ring. Born Salah al Din Yusuf in Tikrit in the year 1136 CE, Saladin was a Kurd in Arab lands who would rise, through good fortune, charisma and military prowess, to unite much of the Muslim world, defeat the Crusaders in battle, and build an Arab empire such as had never been seen before. How did he manage to unite the disparate groups of Muslims and form a formidable fighting force to defeat the Crusaders? And why did his legend of him a great fighter and as an honourable leader spread to Europe?

18. **Mystery files: Sitting Bull and the battle of Little Bighorn**

Original Title: Mystery files: Sitting Bull and the battle of Little Bighorn
Duration: 26'
Producer: Kate Haddock
Director: Kate Haddock
Company: Parthenon Entertainment Ltd.
Scientific Field: Culture/ Anthropology
Year: 2011
Country: United Kingdom

Sitting Bull: the great chief who defied the US authorities and led the American Indians in the biggest massacre of US soldiers in the fight for the west. But most of this legend is false. Through examining the details of his so-called greatest crime, the Battle of Little Bighorn and from new oral history secretly passed down through generations to his great-grandson Ernie LaPointe, Sitting Bull's true story can be revealed. On 25th June 1876, Lieutenant Colonel George Custer and his 7th cavalry attacked Sitting Bull's village near the Little Bighorn river. Battle analysis with Bob Kershaw reveals the victory is not the result of Sitting Bull's leadership but the Lakota's fighting skill. Through a series of errors on Custer's part, his attack plan went awry. Archaeological analysis shows the Lakota and Cheyenne had far superior weaponry, but the secret of the Cheyenne/Lakota's success is their guerrilla fighting style. And evidence from LaPointe's family history and contemporary interviews, reveals that Sitting Bull does not even fight in the battle. He chose to stay and protect his family group. LaPointe explains he was actually a medicine man, a spiritual leader. However, so shocking was the defeat that the US people needed a villain. And Sitting Bull was moulded by the US media to fulfil this need.

19. Mystery files: Taj Mahal

Original Title: Mystery files: Taj Mahal
Duration: 26'
Producer: Mark Westcott
Director: Mark Westcott
Company: Parthenon Entertainment Ltd.
Scientific Field: Architecture
Year: 2011
Country: United Kingdom

The Taj Mahal in Agra, India is one of the most iconic and beautiful buildings in the world. Famed for its near perfect symmetry, the Taj Mahal was completed in the 17th Century, and took just 12 years to build. It is both a tomb and the world's greatest monument to love, built by the heart-broken Moghul ruler Shah Jahan to house the remains of his beloved wife Mumtaz. Now 350 years on it has spawned numerous myths and stories. Some are of violence and cruelty, such as the maiming or killing of the workforce in order that nothing to match the Taj could ever be built again. Some have a romance at their heart, such as the most famous myth of all; that Shah Jahan planned to build a black marble twin of the Taj. This Black Taj was to be his own magnificent mausoleum built within sight of his wife's. Is this one of the greatest lost buildings in history or just a myth?

20. Mystery files: The Birth of Christ

Original Title: Mystery files: The Birth of Christ
Duration: 26'
Producer: Mark Westcott
Director: Mark Westcott
Company: Parthenon Entertainment Ltd.
Scientific Field: Culture/ Anthropology
Year: 2011
Country: United Kingdom

The story of the birth of Jesus, the Christmas Story, is one of the best known stories in the world. Our image of the Nativity is based upon a composite of both Gospels and a good deal of supposition. Visiting Nazareth, we discover little physical proof that Joseph and Mary lived there before the birth of Jesus, despite the writings of Luke. Both Matthew and Luke agree that Christ was born in Bethlehem, but Luke uses the Roman Census and the consequent journey to give historical back ground to his account of the birth and to provide a reason for a pre-birth connection with the town and the region of Galilee, necessary to fulfil Jewish prophecies of the coming of the Messiah. Both Gospels mention King Herod, but his dates do not correspond with the dates of a possible Roman census under the Governor Quirinus mentioned in Luke, which came ten years after Herod the Great's death. We reveal that even though we assume that Joseph is present at the birth of Christ, this is not mentioned in any of the gospels. With help from leading academics, archaeologists and Jewish and Christian theologians, we visit many of the locations mentioned in the Gospels to place the birth of Christ in its historical, cultural and Jewish and early Christian contexts and piece together the real story of The Nativity.

21. **Mystery files: The Virgin Queen**

Original Title: Mystery files: The Virgin Queen

Duration: 26'

Producer: Amy Foster

Director: Amy Foster

Company: Parthenon Entertainment Ltd.

Scientific Field: Forensic/ Experimental sciences

Year: 2011

Country: United Kingdom

She was the “Virgin Queen” of England and one of the most celebrated royals in history, but Elizabeth I wasn't quite as lily white as she was portrayed. It was rumored that she was romantically involved with Robert Dudley, Earl of Leicester. Just years into the Queen's reign, Dudley's wife Amy, died in extremely dubious circumstances. Did Dudley and Elizabeth conspire to murder his wife so that they could be together? Modern crime scene investigation sheds new light on the age old mystery and suggests that Amy did not accidentally die falling down a short flight of stairs, but was in fact the victim of a cold-blooded murder.

22. **Mystery files: Zorro**

Original Title: Mystery files: Zorro

Duration: 26'

Producer: Marc Tiley

Director: Marc Tiley

Company: Parthenon Entertainment Ltd.

Scientific Field: Culture/ Anthropology/ Experimental sciences

Year: 2011

Country: United Kingdom

Zorro is one of the most recognizable heroes in popular legend. Tales of his double-life, his romancing and skill with a sword in defence of the helpless have become famous over the last century. But since first appearing as a fictional character in a series of books by American author, Johnston McCulley, and subsequently on film and television, scholars have been debating which figure from history inspired Zorro the hero. Was he a freedom fighter from California? Was he a Mexican version of Robin Hood? Recently, 17th century records from the most feared institution in the Spanish empire, the Inquisition, have revealed that a mysterious man from Catholic Ireland can stake a claim to be the original Zorro.

23. **Mystery of the giant crystals, The**

Original Title: El misterio de los cristales gigantes

Duration: 50'

Producer: Madrid Scientific Films

Director: Javier Trueba

Company: Madrid Scientific Films

Scientific Field: Earth Sciences/ Environment

Year: 2010

Country: Spain

The Mystery of the Giant Crystals is a fascinating adventure in scientific research. A journey into the depths of the Earth in search of the most beautiful treasures of the mineral world, to explain one of its great mysteries: the formation of giant gypsum crystals. From the Roman mines of Segóbrica described by Pliny the Elder, to Europe's biggest geode, found in Almería, Spain; from the volcanic depths of the Andes, to the grandiose "Cueva de los Cristales de Naica", an authentic crystal palace hidden beneath the Mexican desert of Chihuahua, we shall discover the wonderful world of crystals, their science and their beauty, through the guiding hand of Professor Juan Manuel García-Ruiz.

24. **Nanosciences-Nanotechnologies**

Original Title: Nanosciences-Nanotechnologies

Duration: 160'

Producer: CNRS Images

Director: Marcel Dalaise, Alain Monclin, François Tisseyre & Hervé Colombani

Company: CNRS Images

Scientific Field: Industrial applications/ Nanosciences/ Nanotechnology

Year: 2009

Country: France

A new world is in the making, dealing with nanometres, filled with objects which have strange behaviors... Nanosciences study their properties, while nanotechnologies integrate them into various appliances for practical uses.

25. **Nettle: For a wilder garden, The**

Original Title: The Nettle: For a wilder garden

Duration: 52'

Producer: CNRS Images

Director: François-Xavier Vives

Company: CNRS Images

Scientific Field: Fertilizers/ Agricultural product processing/ Environment/ Nature

Year: 2010

Country: France

Disliked, badly known, the nettle possesses nonetheless many virtues: medicinal, culinary, ecological...As a fermented solution, it enriches the soil and fortifies the crops. As if alarmed by its success, the government decides to bind the use of nettle liquid fertilizer with the help of legislation. Follows a real "nettle war", where the commercialization of the living is the enemy. As a symbol of liberty and defiance to the lobbies of chemical agriculture, the nettle questions our relationship to the wild nature and invites us to a harmonious relationship to biodiversity. Scientists, farmers, landscapers, ethnologists, make us rediscover the nettle from the Pyrenees to the Australian rainforests, from the alleys of the Palace of Versailles to the laboratories of the Kew Garden in London.

26. On the trails of the glaciers

Original Title: Sulle tracce dei ghiacciai

Duration: 52'

Producer: Roberto dall'Angelo

Director: Massimiliano Sbrolla & Paolo Aralla

Company: SD Cinematografica

Scientific Field: Glaciology/ Environment

Year: 2010

Country: Italy

Glaciers provide a reliable indicator of the global climate and environmental changes that our planet is experiencing. A hundred years after the Duke of the Abruzzi's mountain climbing and photographic expedition to the Baltor glacier in Karakorum, a team of scientists and photographers is following in his wake with the aim of carrying out an accurate climatological analysis and to compile a visual record of the transformations that have taken place in the glacier and the environment in general of the last century. The goal of the mission is to highlight the changes in the glaciers and the environment that have taken place over the last century in this most sensitive and important system, by comparing Vittorio Sella's historic images with new images, as well as field data and laboratory analysis. Glaciers are reliable indicators of the climate and environment changes that our planet is experiencing.

27. Papua New Guinea: Expedition in green hell

Original Title: Papouasie: Enfer et contre tout

Duration: 52'

Producer: IRD, Gedeon Programmes

Director: Christine Tournadre

Company: IRD Audiovisuel

Scientific Field: Biodiversity/ Environment/ Wildlife/ Nature

Year: 2010

Country: France

On the outskirts of the Indian Ocean lies Papua New Guinea, one of the rare unexplored territories of the planet. A team led by two researchers -Laurent, a biologist at France's institute for Development Research, and Kadar, his Indonesian student- enter the primeval jungle. Their goal: to find, inventory and finally save the Earth's last rainbow fish. This is a

critically threatened species, whose survivors are hunted by poachers, bought and sold for large amounts of money by collectors and aquarium buffs the world over. What starts as a neat scientific mission becomes an odyssey as the researchers suffer an almost unbelievable series of setbacks and misadventures, to the point where their principal goal becomes survival. Laurent narrates his personal story of this quest in terra incognita: a place where nature itself can turn, without warning, into a deadly trap.

28. Planes go green

Original Title: L'avion se met au vert

Duration: 26'

Producer: Patrice Goldberg

Director: Benjamin Luybaert & Patrice Goldberg

Company: RTBF

Scientific Field: Technologies/ Environment/ Experimental sciences

Year: 2010

Country: Belgium

A l'heure où le monde se penche sur les meilleures manières de fonctionner à l'énergie durable, l'avion a sacrément du plomb dans l'aile. Pas facile pour les gros porteurs, charters et avions de lignes de résister à la comparaison avec les autres moyens de transports. Du bus électrique à la voiture hybride en passant par les bateaux solaires ou le train magnétique, tous ont fait pas mal de chemin. Mais l'avion, lui, vole toujours au bon vieux kérosène bien polluant, fossile à souhait et pas renouvelable de si tôt. Et si la révolution sortait d'une grange, tout comme le premier avion est sorti de ce genre d'atelier improbable du côté de la Virginie il y a plus d'un siècle?... Aujourd'hui, les arrières petits-fils des faucheurs de marguerites innovent encore et toujours dans leurs ateliers. Résultat: des avions propres, il en sort déjà parfois des hangars... Le tout est de mettre la caméra au bon endroit au bon moment! D'après les démonstrations filmées par Matière Grise, ces nouvelles drôles de machines pourraient bien inspirer les grands constructeurs. Et justement, les ambitions s'affichent. Le Solar Impulse, concentré de technologie solaire de Bertrand Piccard, s'apprête à faire le tour du globe. Et le plus gros avion du monde, l'Airbus'A380, vient d'essayer un nouveau carburant pour ses moteurs: un mélange un peu spécial à base de gaz naturel...

29. Power of hugs, The

Original Title: Le pouvoir des câlins

Duration: 26'

Producer: Patrice Goldberg

Director: Veronique Neczyporenko & Patrice Goldberg

Company: RTBF

Scientific Field: Health/ Medicine/ Experimental sciences

Year: 2010

Country: Belgium

Les caresses et les câlins, c'est bien agréable d'en donner et d'en recevoir. Et pour cause, ils stimulent et déclenchent toute une série de mécanismes notamment hormonaux dans notre corps. Résultat: ils nous apportent détente, relaxation et estime de soi. Mais ce n'est pas tout! Les caresses, et plus globalement les marques physiques d'amour et de tendresse, ont un pouvoir bien plus impressionnant encore. Ils peuvent agir au cœur de nos cellules et carrément influencer notre bagage génétique, comme le prouvent de très sérieuses études canadiennes. Ainsi, le fait d'être et d'avoir été plus ou moins câliné aurait un impact direct sur notre résistance au stress par exemple. Certaines caresses seraient d'ailleurs un remède efficace pour aider à sortir de la dépression. Et les câlins auraient même une influence sur notre espérance de vie... Bref: une panacée qui méritait bien un dossier exceptionnel, une enquête de plusieurs mois et des images absolument édifiantes.

30. Rainmakers in Mali

Original Title: Faiseurs de pluie au Mali

Duration: 12'

Producer: Patrice Goldberg

Director: Renaud Dewit & Patrice Goldberg

Company: RTBF

Scientific Field: Environment/ Climate changes and effects/ Technologies/ Experimental sciences

Year: 2010

Country: Belgium

En Belgique, on se plaint qu'il pleut trop. Dans les pays du Sud, c'est l'inverse et le problème est beaucoup plus grave. Mais les hautes technologies peuvent offrir des solutions spectaculaires. Des systèmes satellites couplés à des avions spécialement aménagés permettent de crever des nuages et, ainsi, de faire pleuvoir y compris dans des régions arides. Pas besoin d'être sorcier! Un reportage plein de péripéties entre notre Europe techno et l'Afrique des Charlatans...

31. Secret kingdom

Original Title: Secret kingdom

Duration: 63'

Producer: Nir Toib

Director: Nir Toib

Company: G. N. Communication

Scientific Field: History of Science/ Human Rights

Year: 2010

Country: Israel

The incredible story of the "Yatza Affair", an affair in which Brigadier General (Res.) Yitzhak Yaacov, a member of the Palmach and deputy commander of Gush Etzion during the War of Independence, Head of Warfare Development in the IDF and the State of Israel's first Head

Scientist, was charged with severe espionage against the State of Israel. Yatza, who lived for the last 30 years in New York, returned to Israel to celebrate his 75th birthday. Instead of a birthday celebration, and as an alternative to the Israel Prize, senior defense officials and high tech executives organized a tribute event in his honor. The following day, at Ben Gurion Airport, he was clandestinely arrested and detained in a holding cell at the National Unit for International Investigations. At the end of the interrogation he found himself behind bars for 18 months during which time his trial took place behind closed doors. For the first time in a feature film, the long arm of the “Secret Kingdom” of the Israeli defense system, which is unleashed on anyone it considers an enemy, is revealed. This is a journey into the most primeval fears of the Israelis.

32. Spotlight on San paintings

Original Title: Peintures San en lumière

Duration: 32’

Producer: CNRS Images

Director: Luc Ronat

Company: CNRS Images

Scientific Field: Physics/ Archaeology/ Prehistory

Year: 2010

Country: France

South Africa has one of the richest rock art heritages in the world. Thousands of paintings and engravings are a testament to the artistic talent of the San people who have now completely died out. To further our understanding of these paintings, a team of French and South African scientists carried out the first campaign in this country to analyse rock paintings in situ using a Raman spectrometer. This technique makes it possible to identify the pigments used in the paintings without damaging them. It is an approach that is equally of interest to chemists, archaeologists and curators.

33. Thale cress: Genetic “Meccano”

Original Title: Thale cress: Genetic “Meccano”

Duration: 52’

Producer: CNRS Images

Director: Emmanuel Laborie

Company: CNRS Images

Scientific Field: Biological models/ Environment/ Genetics/ Exact sciences/ Medicine

Year: 2010

Country: France

Difficult to imagine that one would travel the world for an invisible, banal-looking, valueless plant... However, that is what some researchers do. One of them, an INRA geneticist, takes us to the mountains of Kyrgyzstan in his frantic quest for rockcress. But there is a good reason to that: this little wild plant, ignored for centuries, has become in just a few years a key plant for genetic research. It was chosen as a “model organism”. Since then, laboratories from all over the world cultivate, study, clone, modify it, in an attempt to pierce the mysteries of life: the DNA mechanisms, the role of the genes... Very innocently, the rockcress brings up huge issues: “connections” between plants and humans, patenting the living, genetically modified organisms, revolutions in agro-industry...all new domains that create debate everywhere on the planet.

34. Terrebonne

Original Title: Terrebonne
Duration: 15'
Producer: Catherine Shao Berrod
Director: Jeremy Craig
Company: -
Scientific Field: Environment/ Nature
Year: 2010
Country: USA

Things go wrong when Jean ventures deep into the Louisiana swamp with her brother in search of the mythic ivory-billed woodpecker.

35. Unraveling the mystery of an amazing regeneration ability

Original Title: Kyoï no saiseiroky no nazo ni idomu
Duration: 29'
Producer: Yoshifumi Matsumoto, Hideki Takahashi
Director: Yoshifumi Matsumoto
Company: Life Movie Inc.
Scientific Field: Biology/ Plant Evolution
Year: 2011
Country: Japan

A moss *Physcomitrella patens* effortlessly makes clones of itself from separated body parts. By shedding light on this mystery, we might be able to get to the basis of regeneration. The ERATO, Hasebe Reprogramming Evolution Project was launched. They tried to identify the "master gene" that serves as a commander to outline the overall flow of regeneration. And 5 years later, they finally succeeded. These results of the project may be applied to applications such as farming in the future. Additionally, in this video, we show many interesting microscopic images of *Physcomitrella*.

*ERATO(=Exploratory Research for Advanced Technology) is one of the programs in the projects that Japan Science and Technology Agency executes.

36. Vertigo

Original Title: A donner le tournis
Duration: 26'
Producer: Patrice Goldberg
Director: Veronique Neczyporenko & Patrice Goldberg
Company: RTBF
Scientific Field: Health/ Medicine/ Experimental sciences
Year: 2010
Country: Belgium

Qui ne s'est jamais plaint de vertige? Troisième cause de consultation chez le généraliste, il est souvent considéré comme bénin mais il peut aussi empoisonner l'existence de ceux qui en souffrent au quotidien. Les causes peuvent être multiples mais heureusement des traitements existent... et ils n'ont rien de banal! La boule disco, la maison qui tangué, les vibrations de la réalité virtuelle, etc: pour chaque vertige une solution, qui parvient à vaincre le mal tout en douceur...

37. Wings of the sun, The

Original Title: Les ailes du soleil
Duration: 52'
Producer: Diane Riethof
Director: Henri de Gerlache
Company: GEDEON Programmes
Scientific Field: Environment
Year: 2010
Country: France

There are nearly 10 years, faced with enormous energy challenges of our world, two men met about a crazy dream: to fly through the sun's energy and demonstrate that progress can be achieved by using clean energy. They are called Bertrand Piccard and André Borschberg. Bertrand is the grand-son of Auguste Piccard who was the first to enter the stratosphere in 1930; 20 years later, his son, Jacques Piccard, will reach 10.000 meters under the sea aboard a bathyscaphe. Ten years ago, Bertrand surprises all its competitors and travels around the world in a balloon in just 20 days. André Borschberg is an aviator and engineer, a former fighter pilot. The two of them dreamed of the plane, flying symbol of human knowledge at the service of renewable energy. From the first sketches to the manufacture of parts, the challenge has grown...

38. Yew: At the boundaries of life, The

Original Title: Yew: At the boundaries of life, The
Duration: 52'
Producer: CNRS Images
Director: Jean-Luc Bouvret

Company: CNRS Images

Scientific Field: Medical plants/ Flora/ Chemical synthesis/ Environment/ Genetics/ Nature/ Medicine

Year: 2010

Country: France

The yew tree flirts with death. Everything in it is toxic. However, its strange way of growing, its capacity to replant and reinvent itself gives it a sense of immortality. The millenary yew trees fascinate us, but our relationship to this species has always been ambiguous, oscillating between veneration and destruction. It is true that, having found it to be the most precious companion, we have at the same time endangered the species, whereas it gives us the wood for our bows, or more recently biologists discover that it contains an extraordinarily efficient anti-cancer molecule, taxol. Then the yew tree becomes the "green gold", a "miracle" medicine, and suffers its worst deforestation ever! In forests, labs, bow shops...ecologists, doctors and historians tell us the saga of this mythical tree, caught in the whirlwinds of science and modern economy.

39. Zambezi-part 1: Source of life, The

Original Title: The Zambezi-part 1: Source of life

Duration: 50'

Producer: Rita Schlamberger

Director: Michael Schlamberger

Company: ScienceVision Filmproduktions GmbH

Scientific Field: Wildlife/ Nature/ Interaction of people and nature

Year: 2010

Country: Austria

Deep in the heart of Africa the Zambezi is one of the great rivers of the world, yet apart from the Victoria Falls most of it is unknown. *The Zambezi* tells us in two parts the full story of its journey and the life that the river controls from the source in Zambia to the delta in Mozambique. *Zambezi-Source of life* is the first part of this visually stunning two part series that follows the river from its headwaters to the thundering power of the Victoria Falls. As the river ebbs and flows with the season, the Zambezi dominates the life of both the wild animals and the human cultures that depend upon its waters. This is the story of the river through the times of rain and plenty to the dry months when its waters are the only source of life.

40. **The Zambezi-part 2: A river untamed**

Original Title: The Zambezi-part 2: A river untamed

Duration: 50'

Producer: Rita Schlamberger

Director: Michael Schlamberger

Company: ScienceVision Filmproduktions GmbH

Scientific Field: Wildlife/ Nature/ Interaction of people and nature

Year: 2010

Country: Austria

Deep in the heart of Africa the Zambezi is one of the great rivers of the world, yet apart from the Victoria Falls most of it is unknown. *The Zambezi* tells us in two parts the full story of its journey and the life that the river controls from the source in Zambia to the delta in Mozambique. The second part *Zambezi-A River Untamed* follows the river from below the Victoria Falls to where it meanders through its delta in Mozambique. At the height of the dry season, where the Luangwa river joins the Zambezi thousands of hippos crowd together in one remaining channel. Finally the Zambezi gently flows into the Indian Ocean, but the story of the river mirrors the story of life itself. It is the story of Africa.