


[Health News](#)
[Videos](#)
[Article Opinions](#)
[Forum](#)
[Advertise](#)
[Contact](#)

Personalization
[login](#) | [register](#)


 powered by

 Follow us on:
[twitter](#)
[facebook](#)
News Category Menu
[Infectious Diseases / Bacteria / Viruses](#)
[Categories A-B](#) >

[Categories C-D](#) >

[Categories E-G](#) >

[Categories H-L](#) >

[Categories M-O](#) >

[Categories P-R](#) >

[Categories S-Z](#) >

[View full category list](#)
[Infectious Diseases / Bacteria / Viruses News](#)
[Useful Links](#)
[Video Library](#)

A BBVA Foundation Research Project Identifies The Bacteria Arriving Daily From The Sahara Desert

 Main Category: [Infectious Diseases / Bacteria / Viruses](#)

 Also Included In: [Water - Air Quality / Agriculture](#)

Article Date: 27 Jul 2010 - 4:00 PDT

 5
tweets

retweet

[email to a friend](#)
[printer friendly](#)
[view / write opinions](#)

Ads by Google

Every day, millions of microorganisms reach Spain from the Sahara Desert and the Sahel region - by flying. Louis Pasteur demonstrated back in 1861 that germs can move through the air, but it was only recently discovered that bacteria, fungi and viruses can travel thousands of kilometers stuck onto dust particles. Satellite images show clouds that come close to the size of the Iberian Peninsula. For the first time, the international team on the Ecosensor project, funded by the BBVA Foundation, have analyzed these traveling microorganisms using molecular biology techniques. As well as identifying the species, they have found that they colonize high-mountain lakes in the Sierra Nevada and the Pyrenees, and that the phenomenon is escalating with climate change.

Short term memory loss - Differentiate between old age symptoms and Alzheimer's disease - [www.aboutmemoryproblems.com](#)

Bacteria Antibodies - Detect salmonella, E.coli, others Specific sensitive detection - [www.kpl.com](#)

Microbial analysis - Comprehensive. Sensitive. Rapid. Any sample. All known bacteria. - [www.phylotech.com](#)

Current Article Ratings:

Patient / Public: 4 (1 votes)
Health Professional: 3.5 (2 votes)
 Article Opinions: 0 posts

Find other articles on: "[University of Granada](#)"

The "migration" of these microorganisms on African dust is most intense in spring and summer, and has been gathering momentum in recent years; at times multiplying their numbers ten times over. This is due, researchers say, to the drought afflicting the Sahel region for the last thirty years, itself a product of our changing climate. An added spur is the loss of plant cover in Africa driven by changes in farming practices. It is reckoned that between 60 and 200 million tons of dust rise up from the Sahara every year; a material rich in nitrogen, phosphorous and iron with an important role in the growth of marine plankton, and even the fertilization of tropical forests.

Ecosensor brings together an international team of atmospheric physicists and biologists led by Isabel Reche, of the University of Granada, and Emilio O. Casamayor, from the Blanes Center for Advanced Studies. The molecular biology techniques these researchers use allow them to detect almost all the organisms present in a given sample, in contrast to earlier methods which Reche explains revealed "a good deal less than there really is".

The Canary Islands bear the brunt

That is why until now we could not even identify 0.1 percent of the 500 bacteria present in a liter of air, and had no inkling of how they might affect their "destination" ecosystems. The Saharan dust spreads across the whole planet, but the prevailing winds - from the east - mean the regions most affected are the Canary Islands and the Caribbean (see satellite photos).



Infectious Diseases Forum

Discuss issues relating to infectious diseases / bacteria / viruses in our new forum.

[Visit the infectious diseases forum](#)
Latest News For This Category

Advanced Pancreatic Cancer Patients May Benefit From Bacteriolytic Therapy
03 Aug 2010

Eosinophilic Pneumonia Linked With Cubicin Use
03 Aug 2010

£22million Paid By MDU To Settle Medical Negligence Claims For Meningitis Diagnostic Delays Since 1998 - GP's Need To Review Procedures
02 Aug 2010

[View more news...](#)
Most Popular Articles For Infectious Diseases

These are the most read articles from this news category for the last 6 months:



What Is Oral Thrush In Adults (Candidosis or Moniliasis)? What Causes Oral Thrush In Adults?

11 Feb 2010

Oral thrush, also known as oral candidiasis is a yeast fungi infection of the genus Candida that develops on the mucous membranes of the mouth. It is most commonly caused by Candida albicans, but may also be caused by...

What Is Dengue Fever? What Causes Dengue Fever?
17 Feb 2010

Hospital-Acquired Infections, MRSA, Killed 48,000 Americans In One Year
23 Feb 2010

Health Leaders Discuss Polio, Alcohol, Childhood Obesity At WHA
24 May 2010

What Is Bacterial Vaginosis? What Causes Bacterial Vaginosis?
07 Apr 2010

Health Professional Sites
[Ophthalmology](#)
[Urology](#)
Other Navigation Links
[About Us](#)
[News Licensing](#)
[Free Website Feeds](#)
[Free Tools & Content](#)
[Tell a Friend](#)
[Accessibility](#)
[Help / FAQ](#)
[Article Submission](#)
[Links](#)
[Contact Us](#)
[Clinical Trials](#)

Go!

Medical News Today

Find us on Facebook

Facebook is a registered trademark of Facebook, Inc.

Medical News Gadget

Add our medical news to your Google homepage


Ads by Google

[University Of](#)
[University UK](#)
[It University](#)
[Web Granada](#)

Ecosensor researchers have taken air samples in the places where it is easiest to detect the rain of microorganisms, such as high-mountain lakes. "Such spots have barely been altered by local human activity" Reche remarks, "so they are invaluable for studying the incidence of invading airborne microorganisms blown in from remote sources".

The lakes chosen are located in Sierra Nevada and the Pyrenees, as well as the Alps (Austria), Argentinean Patagonia, the Bylot Islands in the Arctic (Canada), and the South Shetland archipelago (Antarctica).

The researchers suck out air, filter it and extract the DNA of the organisms present. "By analyzing the genes we can tell what microorganism they belong to," Reche continues. They also separate the microorganisms to ascertain which can reach the lakes alive.

The same life in Sierra Nevada, the Pyrenees and Mauritania

Their results, which have recently appeared in various scientific publications, show that Sierra Nevada and Pyrenean lakes harbor microorganisms "that we have also found in the soil in Mauritania", says Reche. "It is truly amazing". Among the microorganisms identified are *Pseudomonas* - a *Bacillus* genus capable of colonizing a wide range of niches; *Staphylococci* - a genus that includes microorganisms present in human skin, and *Acinetobacter*, which contribute to the mineralization of the soil. In general terms, they are considered to be non-pathogenic for humans.

But how might the advent of these new microorganisms affect local ecosystems? "The increase in dust load in pristine ecosystems, like high-mountain lakes, has major repercussions" explains Reche, "because with it come nutrients that fertilize the lakes and alter their microbial communities". Some of these changes have harmful effects; indeed the dust may already be damaging the fauna and flora of some ecosystems. Caribbean corals, for instance, are suffering decline due to excess dust deposition.

Another big question is, how do microorganisms manage to stay biologically active after their journey? The dust travels at between 2000 and 4000 meters altitude, exposed to severe dryness and harmful radiation; not all the organisms found form spores, so they must have other defense mechanisms at their command. One hypothesis mentioned by Reche is "an increase in the quantity of protective pigments, which adhere to the mineral particles, conferring a degree of protection".

Source:
 Silvia Churrua
 Fundación BBVA

Please rate this article: **Patient / Public:** or **Health Professional:**
 (Hover over the stars then click to rate)

Ads by Google

Microbial Diversity - Bacterial and Fungal diversity pyrosequencing services - www.researchandtesting.com

Bacteria Antibodies - Detect salmonella, E.coli, others Specific sensitive detection - www.kpl.com

Granada Hotels from 20€ - Special Offer On 200 Hotels Find and Compare our Great Rates - Hotel-Granada.WanderWizz.co.uk

Follow us on Twitter

SHARE

Infectious Diseases / Bacteria / Viruses headlines

email to a friend

printer friendly version

weekly newsletter

personalize your news

rss feeds

back to top

Note: Any medical information published on this website is not intended as a substitute for informed medical advice and you should not take any action before consulting with a health care professional. For more information, please read our [terms and conditions](#).

Add Your Opinion

All opinions are moderated before being added.

Please note that we **publish your name**, but we **do not publish** your email address. It is only used to let you know when your message is published. We

Follow Our News On Twitter: Infectious Diseases

Get the latest news for this category delivered straight to your Twitter account. Simply click the link below and select the 'follow' option.

- Follow our [infectious diseases / bacteria / viruses news on Twitter](#)
- View a list of all our [Twitter feeds](#)

Latest Videos for Infectious Diseases

**Talking with Your Doctor**

Talking with your doctor can sometimes be difficult. Good health care, however, depends on an open dialogue between patients and doctors...

**Keeping a Personal Medical Record**

Medical information is usually scattered in many different places. To receive the best possible health care, people are encouraged to gather information in one place and create a personal medical record...

[View more videos...](#)

do not use it for any other purpose. Please see our [privacy policy](#) for more information.

If you write about specific medications or operations, please **do not** name health care professionals by name.

Your Name:*

E-mail Address:*

Title For Opinion:*

Opinion:*

This is to help prevent SPAM submissions. Please enter the words exactly as they appear, including capital letters and punctuation.*

Oxford unsigned

Type the two words:

Submit!

* Fields marked with a * need to be filled in before you hit the submit button.

Contact Our News Editors

For any corrections of factual information, or to contact the editors please use our [feedback form](#).

Please send any medical news or health news press releases to: pressrelease@medicalnewstoday.com

[Back to top](#)

[Back to front page](#)

[List of All Medical Articles](#)

[Privacy Policy](#)

[Terms and Conditions](#)

© 2010 MediLexicon International Ltd

3 de 403/08/10 11:43

