

Sesame

Our blue world

Only today! We're rapidly approaching Crete, so our cooks thought to prepare some traditional Greek and Crete food [see more on page4] Also, we've been receiving messages from teens who read our publications lately. [page3]. The ones who want to answer please contact

SESAME is a 4-year European Union-funded project designed to study the Mediterranean and Black Sea ecosystems and their abilities to provide goods and services with high societal importance, such as tourism, fisheries and ecosystem stability through conservation of biodiversity. The need for consistent information, together with the indispensable linking of natural and socio-economic sciences, on these two ecosystems have mapped out SESAME's research path. Both the Mediterranean and Black Sea have been experiencing intensive development and exploitation due to their strategic geographical position, and are equally susceptible to human pressures and climate change. SESAME has been suitably created to assess the changes that have occurred in these ecosystems over the last 50 years, while simultaneously predict changes in the ability of the two seas to sustain essential ecosystem functions in the next 50 years.

In August/September 2008, oceanographic research vessels sailed the Mediterranean and the Black Sea. The scientists sampled the same stations as the Ünlüata Cruises of March/April 2008, to study and compare the marine ecosystems at different times and assess the seasonal variability in the Southern European Seas. Now, it's our turn.

Today, we'll try to work with unexplored areas. See more on page4.

Today's headlines

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EDITING TEAM says...

Ahoy everyone!

Christian Jeanthon and his colleague Laurence Garczarek work at the Biological Station of Roscoff in Brittany, France.

They study two big groups of marine bacteria. The bacteria are cells without a nucleus and one thousandth of millimeter in size. In the shallow waters of the ocean (from the surface to 150 meters deep) and the central Mediterranean, there are between 100 000 to 500 000 cells per milliliter.

Some groups of bacteria prefer the surface of the oceans where sunlight is more present, other organisms thrive better at low light, but where the nutrients are more plentiful. To study these micro-organisms present in large number in all the sunlit waters of the oceans, we can use several techniques. We try to cultivate them but the majority of these organisms still resist an artificial environment. We can also use a molecular biology approach which allows us to study the diversity and the ecology of these populations without preliminary cultivation.

They isolate the DNA and we study its genes. To isolate several micrograms of DNA required for their experiments, they have to concentrate the bacteria on a filter by filtering 5 to 10 liters of seawater. The filtration is the major part of their work on board. At long duration stations, they filter every 3 hours during 3 days. When they are back to their laboratory on land, they could isolate genes present in all the bacteria and compare their sequences to identify them. Moreover, they will take an interest in specific genes of the groups we study to identify the specific gene sequences of the species we can not cultivate yet. At last, these samples will allow everybody to understand the effect of the marine environment (light, temperature, nutrients etc.) on the diversity of marine bacteria and assess the mid-term impact of global climate changes.



INTRODUCING: PLANKTON

Plankton are small drifting organism in all aquatic environments and stay at the base of the food web. They can be divided into trophic level groups: Phytoplankton are (usually unicellular) algae, living at the surface waters, where there is sufficient light to support photosynthesis., Zooplankton (like crustaceans and other protists or metazoans, larval stages of fish, annelids) feed on the phytoplankton and are consumed by small fishes., Bacterioplankton are bacteria and archaea, which play an important role in nutrient cycles in the water column.



Within the plankton, holoplankton are those that spend their entire life cycle in the plankton, while meroplankton are those organisms that are only planktonic for part of their lives (usually the larval stage), and then move into the nekton or a benthic habitat. Examples of meroplankton include larvae of sea urchins, starfish, clams, crustaceans, worms and most fish.



Plankton abundance and distribution are strongly dependent on factors such as nutrient concentrations, the state of the water, and the abundance of other plankton. In temperate climates, springtime brings increased light and higher temperatures, resulting in a spring bloom of phytoplankton, followed by zooplankton. During the summer, dead organisms sink to the bottom where bacteria and fungi break down the tissues in the process of decay. This decomposition restores the nutrients, which concentrate on the bottom, although the phytoplankton that need them are on the top of the water column. Consequently the rate of photosynthesis declines. During the summer, the water column is stratified with warmer water staying on top and cooler water staying on the bottom. Only when water movements can bring the regenerated nutrients up closer to the surface can the phytoplankton bloom again. This happens in the fall,

when temperatures fall and surface water sinks down and bottom water comes up causing the stratification to break down and another small bloom to occur. Although tropical oceans have abundant light, they have relatively low primary production because of low levels of nutrients such as nitrate and phosphate, due to perpetual stratification of the water column. While plankton are found in the greatest abundance in surface waters, in areas that are too deep for primary production to occur, zooplankton and bacterioplankton can make use of organic material that sinks down from the surface waters above.

Caption of the day



Let's sail over the... pool! Who said there can't be pools in the middle of the sea? If you don't like jellyfish, come and enjoy the sun. Although, you could miss a few handsome fish and some groovy swim over there...even on a research vessel.

An interview with...

Steve Zissou

Journalist: Hello! Mr. Zissou, we are from Sesame magazine and we would like to ask you some questions.

Steve Zissou: Yes, of course...

J: What do you have in view with this expedition?

SZ: We expect to see different and new species of flora and fauna, due to the changes happening lately in the atmosphere (such as climate changes). We want to design another sort of nature, called nature before seas.

J: That sounds very interesting! It is good to know there are people who care about such delicate issues, like wild underwater environment. To continue talking about your trip, have you discovered something?

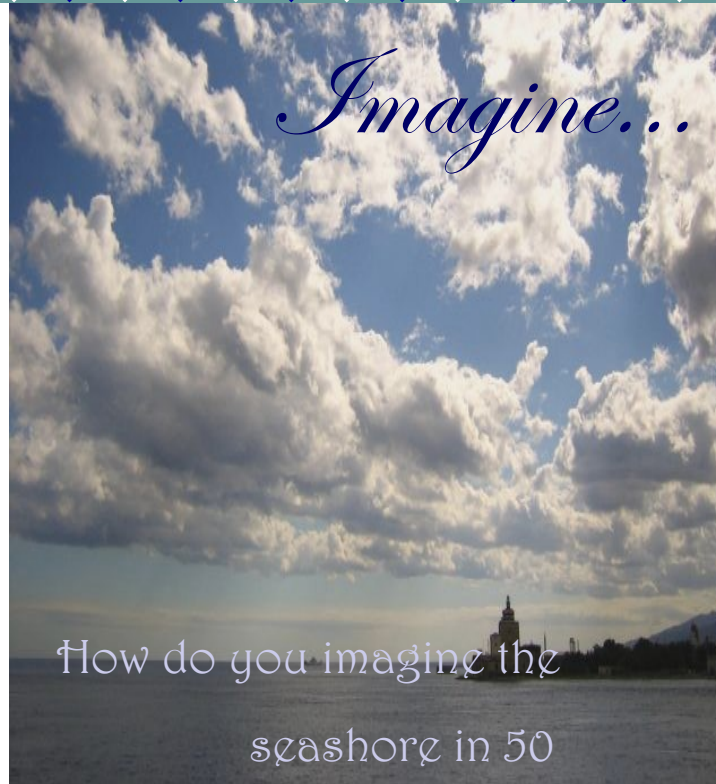
SZ: Not actually. We are nearly to give you an answer, but we hope, that in the next few days that left, to discover a new family of dolphins.

J: Have you assumed any risks concerning your research?

SZ: Hmm... Any job involves risks, even if you are on the ground or in the air or on a vessel. If you like what you do, you always find a "middle way".

J: Yes, I understand. Do you have a conclusion after drawing the line on this day?

SZ: Ummm...not quite. We have to explore more and more before pronouncing.



Our readers have answered us...and the majority's message is:

<<Shores without seaweeds, with delicate sand, without trash all over the beaches, and with researchers who investigate anytime and everywhere everything concerning the aquatic environment

We expect that in the future, the name of our country will no longer be dragged in the mud.>>



This is the course of our journey. As you know, we left from Varna, Bulgaria, we reached Cyprus and now we're approaching Crete. After that, we'll set our course towards the Rhodes Island, and then we'll head home, to Constanta.



If we want to take part of one of your expeditions what conditions do we have to satisfy?

"I have discovered a new type of sea weeds, how can I reach you to give you this? Or how can I present that to the world?"

Will you dock in Greece?

Q. If you throw a red stone into the blue sea what does it become?

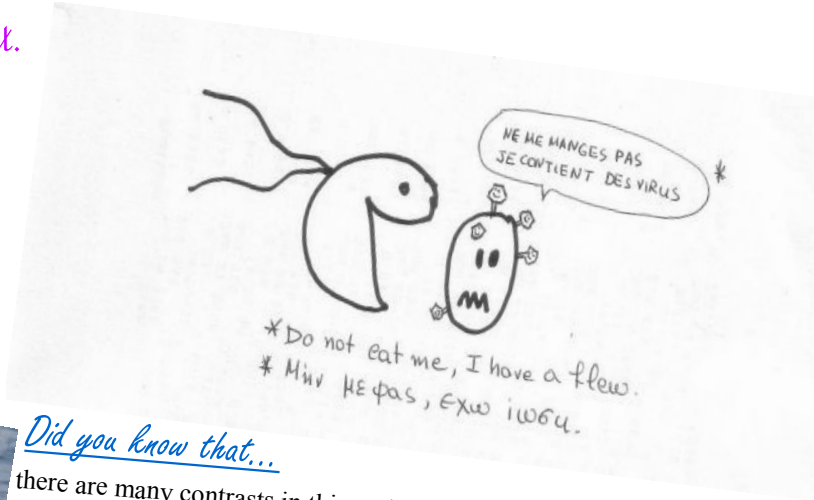
A: It becomes wet.



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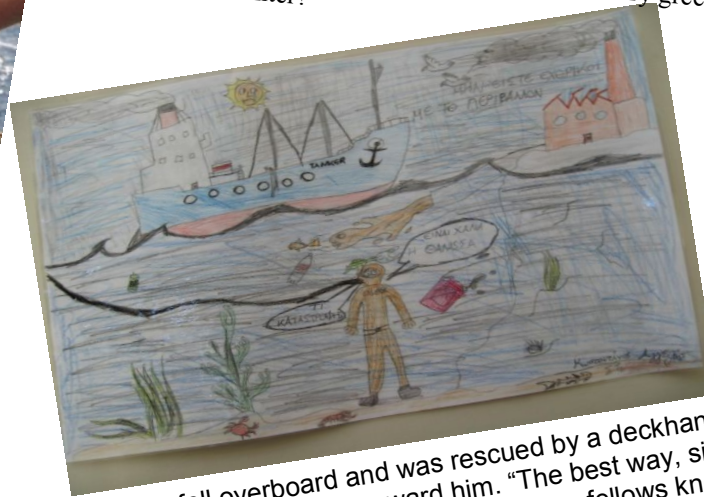
Aye aye mates,

How are you feeling today? It's day 5, sun's shining and the weather is said to be fine. Today we're passing around Crete, the largest of the Greek islands, and we'll try to work on unexplored areas: the big anticyclonic whirls that we have tracked from space with the aid of satellites and then we'll make sure that we'll be in the middle of it. Today at the cafeteria we'll be serving traditional Crete and Greek food. Hope you like it.



Did you know that...

there are many contrasts in this region, you can go from incredible beaches to impressive mountains, from big (and chaotic) cities to really small picturesque villages, from very dry, almost desert areas to very green zones like the springs in the center?



A naval officer fell overboard and was rescued by a deckhand. The officer asked the sailor how he could reward him. "The best way, sir," replied the bluejacket, "is to say nothing about it. If the other fellows knew I'd pulled you out, they'd throw me in."

Bibliography

<http://www.explorecrete.com/crete-diet-recipes.htm>

<http://www.piratesteve.com/PirateSailorJokes/piratesailorjokes.html>

<http://www.sesame-ip.eu/public/follow-the-cruises>

Name and address of the class: 9B1, "Ovidius" Highschool Constanta, Romania, 2, Basarabi street, 900710

Age—15-16 years old

Number of students: 14

Coordinating teacher: Carmen Bucovala



The menu for today is just delicious.

Lunch:

Chicken with Olives

[Kolokithokeftedes](#), fried courgette or zucchini balls

Walnut cake

Dinner:

Boureki

[Sarikopites](#)

Today's stats

Feels Like: 53°

Barometer: 29.69 in and falling

Humidity: 24%

Visibility: 10 mi

Dewpoint: 17°

Wind: NNE 5 mph

Sunrise: 7:11 am

Sunset: 7:53 pm



Two shipwrecked sailors met in the open ocean. Each clinging to his own log. "Ahoy," exclaimed the first, "Your ship has sunk?" "Yes, a year ago." "You don't say so? And you've been at the sea all this time?" "Aye, and what about it?" "How could you endure it for so long?" "Wondering myself. It was so boring, on Sundays in particular..."

