

Year's comments for 1998

As it has been customary in the journal of the Spanish Society for Microbiology (SEM) for the last few years, the last issue of 1998 offers you our comments on the events and discoveries related to microbiology that have taken place over the year.

In the field of biology, probably the scientific discoveries which have most attracted the attention of mass media have been, like in 1997, those related to both animal cloning and technology which applies the nuclear transfer technique. New clonic animals have been produced, and cloning techniques have been adopted in cell and transplantation therapy. The culture of embryonic stem cells offers a resource for the supply of unlimited quantities of human cells of many tissues, which could be tailored to avoid the attack by the immune system. Research on human embryonic stem cells has created new ethical dilemmas, which add to those originated in 1997 by the possibility of human cloning.

Microorganisms are not missing, however, from the 1998 scientific records. According to The Institute for Genomic Research (TIGR) of the United States, 18 microbial genomes have been published since the first genome—that of *Haemophilus influenza*—was published on *Science* in 1995, and many more are in progress. Recently, The Sanger Center of the United Kingdom announced they had finished the genome sequence of *Campylobacter jejuni*. The sequences published in 1998 are those of *Aquifex aeolicus* (Deckert et al., *Nature* 392:353–358), *Pyrococcus horikoshii* (Kawarabavasi et al., *DNA Research* 5:147–155), *Mycobacterium tuberculosis* (Cole et al., *Nature* 393:537–544), *Treponema pallidum* (Fraser et al., *Science* 281:375–388), *Chlamydia trachomatis* (Stephens et al., *Science* 282:754–759) and *Rickettsia prowazekii* (Andersson et al., *Nature* 396:133–140). At the turning of the 21st century, *M. tuberculosis* has been

estimated to kill around three million people annually. The development of drug-resistant forms, as well as the association of the parasite with the human immunodeficiency virus (HIV), have made tuberculosis a re-emerging life-threatening infection. Although understanding all the information contained in *M. tuberculosis* genome will not be an easy task, a gleam of hope is open. *Treponema pallidum* has been one of the pathogens most difficult to study with the traditional microbiological techniques. Its genome has revealed that this organism obtains many essential molecules from its host, thus explaining why it has been so hard to grow in the laboratory. The *Rickettsia prowazekii* genome has revealed the relatedness between this bacterium and mitochondria, which is another evidence of an endosymbiotic origin of those cellular organelles, as proposed in the late 1960s by Lynn Margulis.

The possibility that a meteorite of Martian origin (ALH84001) contained evidence of biological activity has been fading as the results of several studies made on the meteorite were published. The concentrations of ^{13}C and ^{14}C measured after step-heating experiments, as well as the composition and chirality of amino acids found in the meteorite suggested that the presence of organic carbon components and most amino acids might be the result of terrestrial contamination. Regardless these negative results, NASA astrobiology programs continue. One of the most exciting findings published in 1998 has been the presence of water ice at the lunar poles, which are areas permanently shadowed from sunlight. The total amount of water present there could be of the order of billions of tonnes. We must mention here that two electron microscopists in Spain (Carmen Ascaso, Madrid, and Jacek Wierzbos, Lleida) are currently studying ALH84001.

After the discovery, some years ago, that *Helicobacter pylori* was the causal agent of many peptic ulcers, some cardiovascular

researchers thought that fatty arterial deposits that trigger heart attacks and many strokes might be also attributed to some pathogens. (Traditionally, these disorders, like ulcers, had been attributed to diet, life style and genetic susceptibility.) If it were confirmed that a link does exist between infection and cardiovascular disease, maybe its prevention would be easier than it is now with the blood pressure-reducing, cholesterol-lowering drugs and diets. The presence of *Chlamydia pneumoniae*, cytomegalovirus (CMV) and *H. pylori* could be among the factors causative of the heart disease. Let us see what is the denouement for this exciting plot. On the other hand, viruses, which can cause so many diseases, and even some kinds of cancer, could be also a solution to eradicate cancer without harming healthy tissues. Several companies have been studying the possibility of “taming” viruses and making them tumor-killing agents. Some oncolytic viruses are already in clinical trials.

The scientific community regrets the death of Holger W. Jannasch (1927–1998), one of the greatest microbiologists of the second half of the 20th century, who passed away in his home in Woods Hole on September 8. Jannasch had been a researcher at Woods Hole Oceanographic Institution since 1963. He participated in the expeditions of the Alvin submersible, which discovered deep-sea hydrothermal vents, and he studied the microbiota living in those habitats, at more than 2500 m depth, where sunlight cannot possibly reach. Solar energy is there replaced by terrestrial energy, liberated by the oxidation of reduced inorganic chemicals, with chemolithoautotrophic bacteria taking the role of green plants as primary producers. You can know more about Jannasch and the fascinating microbial world he studied by reading his article “Small is powerful: Recollections of a microbiologist and oceanographer” (*Annu. Rev. Microbiol.* 1997, 51:1–45). The next issue (March 1999) of INTERNATIONAL MICROBIOLOGY will contain a short article on Jannasch fondly written by his collaborator Andreas Teske.

The new journal of SEM

You have in your hands the 4th issue of a journal—INTERNATIONAL MICROBIOLOGY—apparently new, but more than fifty years old. The Spanish Society for Microbiology (Sociedad Española de Microbiología, SEM) has published an official journal since 1947, when *Microbiología Española* was

launched. Until 1985, the journal was a joint publication of the SEM and the Institute Jaime Ferrán (from the Spanish National Research Council, CSIC). In 1985 the SEM started by itself the publication of a new journal, *Microbiología SEM*, which was the continuation of the former. In 1998 we have seen another relaunch of the journal, now under the title INTERNATIONAL MICROBIOLOGY.

The aim of the changes introduced in INTERNATIONAL MICROBIOLOGY is to offer to the readership an up-to-date, visually attractive publication, that keep pace with other scientific international journals. These changes do not stand alone, however; the scientific quality of the articles published is a high priority. The journal has now two general sections: Articles and Complements. The Articles section consists of research papers and critical reviews on hot topics across the whole field of microbiology and related disciplines, which meet the required criteria of quality. The Complements section consists of contributions related to microbiology in a broad sense, and it comprises Editorials, Perspective and Opinion articles, as well as Book Reviews.

The change in the title of the journal shows the hope of the SEM to span the scope of its publication, making it an international journal. To achieve this goal, two steps have been made. First, enlarging its board of editors, which consists now of a broad panel of researchers from different countries, headed by five international associate editors. Besides, the relaunch of INTERNATIONAL MICROBIOLOGY means also the beginning of a joint venture with international publisher Springer-Verlag, which we hope will be fruitful for both parts.

At the end of the first year of publication of INTERNATIONAL MICROBIOLOGY, its Editorial Board is proud of the outcome. We have received 95 manuscripts in 1998. The four issues comprise 35 Articles and 16 Complements, with a total 338 pages. This year we have published two monographic issues: On June, the journal focused on “Perspectives in non-conventional fungi research.” The December issue is commemorating the tenth anniversary of the CIBE-Merck Symposia. The articles are reviews of hot topics, in general and applied microbiology, written by researchers that have participated at some of the CIBE-Merck Symposia. We thank CIBE-Merck, and especially its Director, Dr. Sagrario Mochales, and wish to add our best wishes for her retirement to those expressed by the authors that have contributed their articles for this issue.

Ricardo Guerrero
Editor-in-Chief