# Preface

For the 16th time, the Evolutionary Biology Meeting at Marseilles (EBM) took place. The goal of this annual meeting was to allow scientists of different disciplines, who share a deep interest in evolutionary biology concepts, knowledge and applications, to meet, exchange and start interdisciplinary collaborations.

The EBM at Marseilles is now recognised internationally as an important exchange platform and a booster for the use of evolutionary-based approaches in biology and also in other scientific areas.

This year more than 100 presentations were selected by the EBM scientific committee. These presentations really reflected the epistemological positioning of the meeting. We have selected 19 of the most representative ones for the book.

The book will give the reader an overview of the state of the art in the evolutionary biology field. The book is the sixth that we have published further to the meeting. I would like to underline that the six books are complementary to each another and should be considered as tomes.

The reader of evolutionary biology books as well as the meeting participants would maybe, like me, witness years after years during the different meetings and book editions a shift in the evolutionary biology concepts. Obviously, this shift is not only specific to this meeting but also reflects a general trend in the evolutionary biology community and the scientific community.

We shifted slowly in a few years from bifurcative phylogenetic trees thinking of evolutionary processes to a phylogenetic network thinking (Chaps. 10 and 11) indicating that the part of horizontal evolution should not be neglected. The HGT hybridization and the speciation process do not lead to clear-cut separation between species but to more or less mosaic evolution (incomplete lineage sorting).

In regard to the HGT concept, scientists interested in the origin of life questions do not think any more or much less of the Last Universal Common Ancestor hypothesis (concept linked to a tree view of evolution) but to a world with independent protocells, each of them bringing its own metabolic contribution to the protocells community (Chap. 6).

Another new discovery that will be important to shifts in evolutionary biology thinking is the revolutionary concept of transgenerational epigenetic showing that heredity is not only based directly on the genetic code (Chap. 13).

I am still puzzled that the adaptationist thinking stays very much alive and the fact that evolutionary models (mathematics and informatics) rely strongly on that.

In fact, the participation of the adaptive evolution on evolutionary shift is likely to be minor, but this is my hypothesis; let us see what will happen in the future and especially at the EBM.

As for the last book, we start the book with a chapter, then explain the history of great discoveries, and the life and scientific contribution of major contributors in the field.

The following articles are organised in the following categories:

Evolutionary Biology Concepts
Exobiology and Origin of Life
Evolutionary Mechanisms

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