

MOLECULAR ECOLOGY AND EVOLUTION

Molecular Ecology and Evolution: Approaches and Applications. (B. Schiervater, B. Streit, G. P. Wagner & R. DeSalle, eds.). Birkhauser Verlag, Basel, Boston & Berlin, 1994, 622 pages, ISBN 3-7643-2942-4 (Basel) or 0-8176-2942-4 (Boston).

One of the purposes of this volume containing 36 contributions is to demonstrate the impact of the molecular techniques in biological and evolutionary studies. The structure of the book itself is resembling the "waves" of the development of molecular techniques. In the first period of their development the protein electrophoresis revolutionized population and evolution genetics already in the late sixties. DNA sequencing and RFLP studies made it possible to analyze genome evolution in the eighties and finally, at present, PCR^{*)} provides powerful tool for a wide range of applications in ecology and evolution genetics.

The papers are organized almost proportionally in four sections: (1) DNA fingerprinting and behavioral genetics, (2) Population biology, (3) Molecular systematics, and (4) Speciation, development and genome organization. Most of the papers are covering specialized case studies both in plants or animals.

The first section covers different laboratory techniques that can be used of studying the mating patterns, kinship and reproductive success. The next chapter on population biology is primarily aimed at the development of individual techniques and their impact on the population genetic studies

during the last thirty years. In the last section of the reviewed publication more attention is paid to some questions of speciations and genome organization than to molecular techniques as such.

In general the books covers a wide range of applications, from microorganisms to vertebrata; only the long-living organisms, forest trees, are missing among the examples. Although no direct links to forest trees are given, the reader can easily find some good examples and applications of his interest. For a book of 600 pages one could expect more review papers covering wider topics and generalizing the knowledge in the given field. Its main contribution are the methodological aspects and analysis of the steps of the development of molecular techniques as illustrated on the above mentioned case studies.

In any case the reviewed publication will also help the population and evolution geneticists working with forest trees to find new and modern approaches and to apply them in their research.

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^{*)} For this type of analyses we would like to stress the attention for other two publications from the same publishing house:

Mullis, K.B., Ferre, F. & Gibbs, R.A., 1995: *The Polymerase Chain Reaction*. Birkhauser Verlag, Basel, Boston, New York ISBN 3-7643-3607-2 (hardcover) price CHF 148, or ISBN 3-7643-3750-8 (softcover), price CHF 84.

Gu, J., 1995: *In Situ Polymerase Chain Reaction and Related Technology*. Birkhauser Verlag, Basel, Boston, New York ISBN 3-7643-3870-9 (hardcover) price CHF 58