

A critical review of a book entitled «Mobile genetic elements and plasticity of plant genomes», written by prof. V. A. Kunakh (Kyiv: Logos, 2013)

(Kyiv: Logos, 2013; 298 p. ISBN 978-966-171-721-2)

This is probably the most comprehensive and detailed review of transposable elements in plants that has been written to date. Every aspect of transposable elements (TE) in plants has been covered.

The information that was extracted from 704 references is presented in 234 pages of text plus 70 figures and eight tables. The review covers 30 classes of retrotransposons. The literature (plus the author's own publications), has been very well surveyed and recorded, into thirty sections. It begins with the original hypotheses of Hugo de Vries in 1906, to the observations in variegated maize, by Emerson in 1917, McClintock in 1946 to more recent papers on epigenetics and genome evolution by Fedoroff in 2013. The majority of citations refer to more molecular aspects of TE that were published in the last two decades.

This volume of information is logically and coherently presented. To provide for a sense of coherence in dealing with the vast amounts of information, the review is divided into three parts.

Part 1 is entitled «General Characteristics of Mobile (Transposable) Genetic Elements». This part is divided into six sections including a brief history of mobile genetic elements (MGE), biology of MGE, retrotransposons, DNA transposons and evolution of mobile genetic elements in plants, including life histories and phylogeny.

Part 2 is entitled «Biological Significance of Mobile Genetic Elements» and this is further divided into ten sections. It covers such topics as the effects of stress on MGE transposition, evolutionary role of MGE, gene rearrangements brought about by transposition, role of MGE in the evolution of plant genomes, mobile ele-

ments and plant epigenetics, role of transposons in plant populations, MGE and sex evolution, role of MGE in chromosome organization and horizontal gene transfer.

Part 3 is entitled «Applied Aspects». This part is divided into seven sections and deals with such issues as conditions and factors involved in gene cloning and control of transposition, transposon mutagenesis, vector systems for genetic engineering, practical significance of MGE transposition within and between genomes, gene cloning, tools for biotechnological studies and MGEs as genetic markers.

The book will be a useful review and source of references, on this very complex topic, for scientists, graduate students and any other interested persons. The scientist will find this book a useful source of information on every aspect of MGEs. Further detail on all these aspects can be found in the 704 references provided. The literature review is extensive and up to date. This book will also appeal to graduate students. In addition to the scientific information, the author has included a glossary of 34 pages with about 700 definitions of genetic and molecular genetics terms. These definitions will be useful to all readers.

The text of the book is very well written and easy to read. It is written in Ukrainian with Tables of Contents, Introduction and Summaries in English. This book will be a very useful addition to any scientists' book shelf.