

frequency of chromosome aberrations declines. The frequency of aberrations in anaphases is higher than in metaphases, but as both types of aberrations were scored in 2 independent experiments, no conclusions in this respect can be drawn.

The results presented in this communication demonstrate the possibility of the application of mutagenic compounds on excised barley embryos and the cultivation of these treated embryos *in vitro* in a nutrient medium. The method can be applied to study the effects of longer expositions of metabolic inhibitors, growth regulators or other chemicals on the yield of mutagen-induced injury *e.g.* mitotic depression and chromosome aberrations.

References

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BOOK REVIEW

KOLBER, A. R., KOHIYAMA, M. (ed.): **Mechanism and Regulation of DNA Replication.** — Plenum Press, New York and London 1974. 459 pp., 39.10 US \$.

This volume resulting from the proceedings of two NATO Advanced Study Institutes contains 31 papers reporting on major problems concerning the mechanism and regulation of DNA replication. The greater part of contributions are reviews of previously published work, some papers report new experimental data in the usual style of original articles. The book is divided into three parts covering Chromosome Replication in *Procaryotes*, DNA Replication in *Eucaryotes* and Chromosome Replication and Cell Division.

Part I is by far the largest section of the book (20 papers) and consists of three chapters. In contributions under heading Enzymatic Aspects of Chromosome Replication in *Escherichia coli* the attention is particularly paid to isolation, properties and mode of action of DNA polymerases II and III, to the function of T₄ ligase, of polymerase I and of exonuclease V, and to the role of ATP and of membrane protein components in DNA synthesis and chromosome replication. The second chapter includes papers on DNA Replication in Bacteriophage and Episomes (mechanism and factors of replication and the relation of replication to recombination and repair). The last chapter of Part I is entitled Chromosome Structure and Mode of Replication and is particularly concerned with bidirectional replication, with the isolation of intact folding replicating chromosomes and with the mechanism of gene replication in *Escherichia coli*.

The contributions concerning *Eucaryotes* (Part 2, 8 papers) are mainly oriented on mammalian polymerases, on the problem of possible role of nuclear membrane in chromosome replication and on the mechanism of histone requirement for DNA synthesis. The only paper on higher plant material deals with the function of DNA-binding protein in meiotic cells of *Lilium*. The last two reports are concerned with Simian virus (SV) 40 and mitochondrial DNA.

Part 3 comprises three studies on topology of membrane growth in *Escherichia coli* and on biochemistry and physiology of cell division in bacteria.

The information, ideas and bibliography presented in this volume will be invaluable for future work in DNA and chromosome replication.

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