

Paperback Re-issue

Meiosis is a unique developmental pathway in the sexual cycle of eukaryotes. It involves the reductional division of the chromosome complement coupled with a reassociation of its informational content. The process has been well characterized at the cytological level and its most conspicuous features involve the pairing of homologous chromosomes followed by their recombination and segregation.

There is a well established relationship between the behaviour of the chromosomes during meiosis, their distribution to the gametic nuclei and their genetic transmission. However, the gulf between these mechanical events and their underlying physiological and molecular bases has, in the past, led a majority of cell biologists to concentrate on the simpler, and more amenable, mitotic cycle. Recent developments at the ultrastructural and biochemical levels, coupled with a detailed genetic dissection of the relevant processes involved in the meiotic sequence, have dramatically changed this scenario.

While many unresolved issues still remain, it is now possible to reformulate them in more tractable terms. Using this approach, the present monograph details the various modes of meiosis, summarizes the current state of knowledge concerning the events and mechanisms involved, compares the role of meiosis in sexual and subsexual systems and discusses their evolution. It thus provides the most comprehensive and balanced account of the meiotic process available to date and offers an invaluable reference source for all with an interest in this distinctive form of cellular differentiation.

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