Paperback Re-issue

With the recognition of the importance of cell reproduction for the creation and maintenance of animal body form came the realization that cell division is a central event in biology. Division of living cells could be observed with relative ease long before the process could be satisfactorily analyzed by experimentation. Its regularity and apparent simplicity at first prompted much speculation, but little concerted effort at objective analysis. This book attempts to trace the long history of some of the major ideas in the field. It gives an account of our knowledge of animal cytokinesis and contains descriptions of division in different kinds of cells, as well as the proposed explanations of the mechanisms underlying the visible events. Experiments devised to test cell division theories are described and explained. The forces necessary to deform animal cells to the degree shown in cytokinesis now appear to originate from the interaction of linear polymers and motor molecules that have roles in force production, motion, and shape change that occur in other phases of the biology of the cell. The localization of the force-producing division mechanism to a restricted linear part of the subsurface is caused by the mitotic apparatus, the same cytoskeletal structure that ensures orderly mitosis.

All those with a particular interest in the cell cycle will find this book invaluable. Its clear readable style, however, will ensure that those working in other areas of cellular and developmental biology will also find this an interesting account of an event of central importance in the life of the cell.

Developmental and Cell Biology Series 32.

Cover photograph shows the second cleavage of a sand dollar egg (see Figure 1.2)

Cover design by Alice Soloway

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