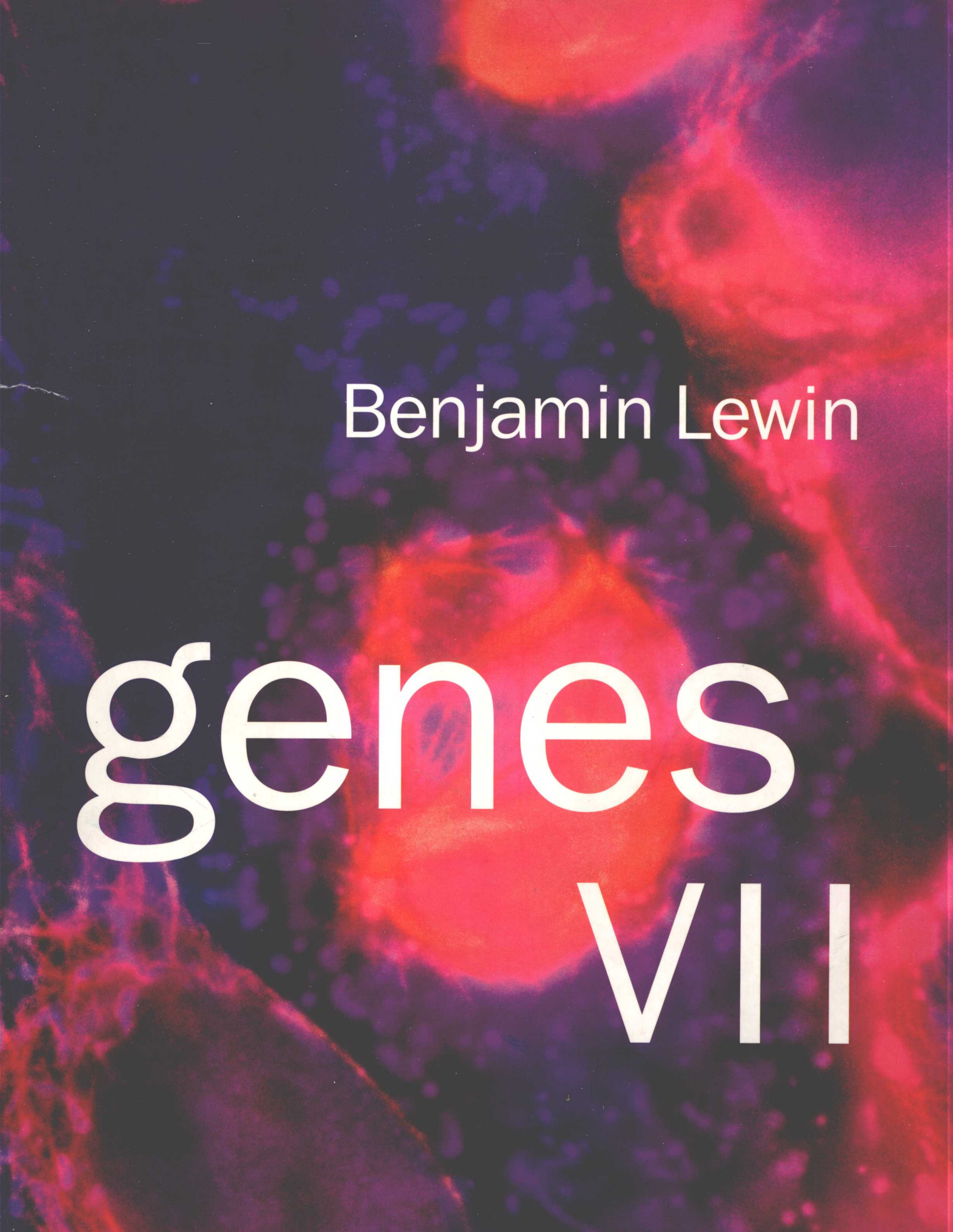

Benjamin Lewin
genes
VII

# Genes VII

Benjamin Lewin

OXFORD
UNIVERSITY PRESS

OXFORD
UNIVERSITY PRESS
Great Clarendon Street, Oxford OX2 6DP
Oxford University Press is a department of the University of Oxford.
It furthers the University's objective of excellence in research, scholarship,
and education by publishing worldwide in
Oxford New York
Athens Auckland Bangkok Bogotá Buenos Aires Calcutta
Cape Town Chennai Dar es Salaam Delhi Florence Hong Kong Istanbul
Karachi Kuala Lumpur Madrid Melbourne Mexico City Mumbai
Nairobi Paris São Paulo Singapore Taipei Tokyo Toronto Warsaw
with associated companies in Berlin Ibadan

Oxford is a registered trade mark of Oxford University Press
in the UK and in certain other countries

Published in the United States
by Oxford University Press Inc., New York

© Oxford University Press and Cell Press, 2000

The moral rights of the author have been asserted
Database right Oxford University Press (maker)

First published 2000, reprinted 2000,2002

All rights reserved. No part of this publication may be reproduced,
stored in a retrieval system, or transmitted, in any form or by any means,
without the prior permission in writing of Oxford University Press,
or as expressly permitted by law, or under terms agreed with the appropriate
reprographics rights organization. Enquiries concerning reproduction
outside the scope of the above should be sent to the Rights Department,
Oxford University Press, at the address above

You must not circulate this book in any other binding or cover
and you must impose this same condition on any acquirer

A catalogue record for this book is available from the British Library

Library of Congress Cataloging in Publication Data
(Data applied for)

ISBN 0–19–879277–8 (Pbk)
0–19–879276–X (Hbk)

Typeset by J&L Composition Ltd, Filey, North Yorkshire
Printed in The Italy by LegoPrint

# Genes VII

# Preface

This edition of GENES marks the most significant reorganization for several editions. It is time to acknowledge that the power of direct analysis of the genome is making a significant difference to our approach. This is now recognized in the first part of GENES, which starts with the concept of the gene as a segment of DNA coding for protein and then proceeds directly to the characterization of the genome in terms of its content of genes.

The rapidity of our advance in analyzing the genome has led to some confusion about means and ends. A genome is no more than a sum of the genes it contains, although the number and complexity of these genes gives us important insights into the nature of their connection into regulatory networks. The focus of this book, as its name suggests, therefore remains firmly on the gene.

The thesis of GENES is that only by understanding the structure and function of the gene itself will we be able in turn to understand the operation of the genome as a whole. Although the emphasis has shifted to the characterization of eukaryotic genes, and therefore to their analysis by the direct techniques of molecular biology rather than the subtlety of genetics, the classical approach remains intellectually penetrating. It remains an aim of this book to integrate both approaches in the context of a unified approach to prokaryotes and eukaryotes.

We consider the gene from all aspects: the basic forms that it takes, the numbers and relationships among genes in a genome, their packaging into chromosomes, the process of gene expression from transcription through translation, the reproduction and safeguarding of the structure of the gene, and finally some aspects of the overall circuitry through which genotype determines phenotype.

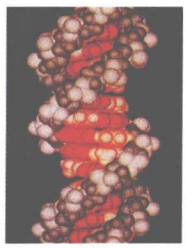
Almost two decades after the first edition of GENES, this latest edition is a celebration of the remarkable progress during that time, and, I hope, an indication of the future to come.

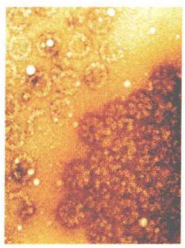
B. L.
*Cambridge, Massachussetts*
January 2000

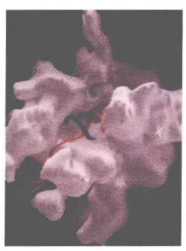
试读结束：需要全本请在线购买： www.ertongbook.com

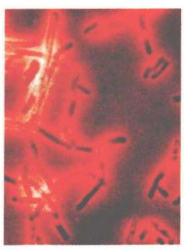
# Outline

# Contents

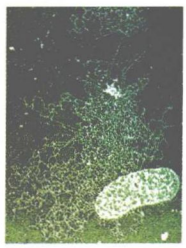


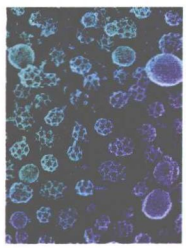






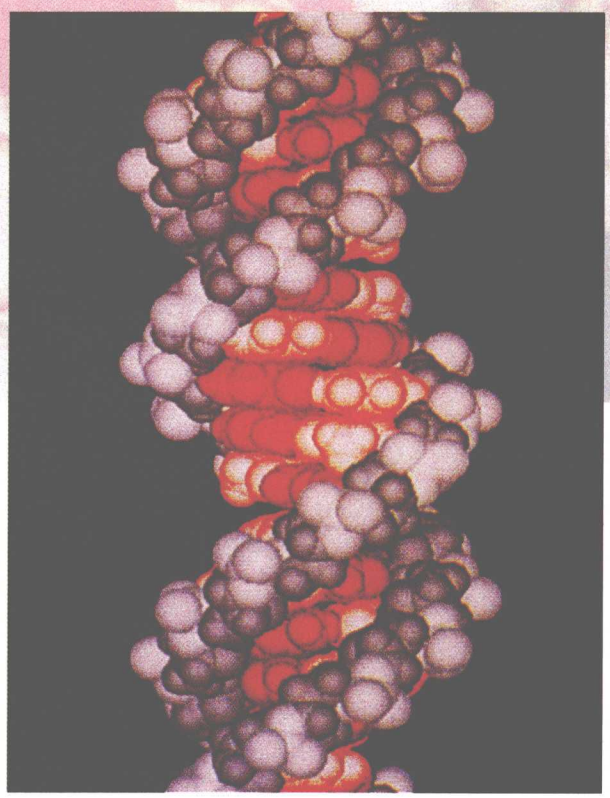
试读结束：需要全本请在线购买： www.ertongbook.com





Part 1

# Genes



试读结束：需要全本请在线购买： www.ertongbook.com