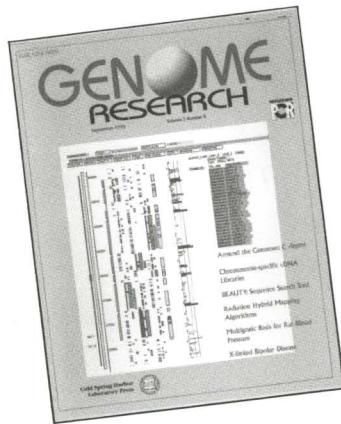


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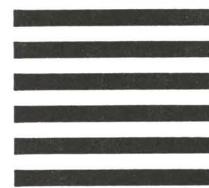
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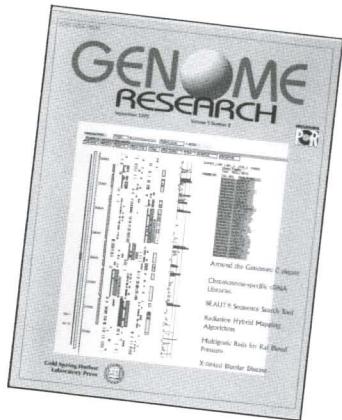


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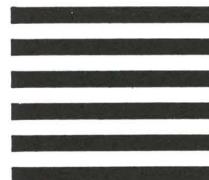
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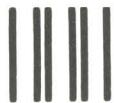
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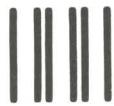
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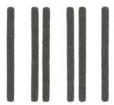
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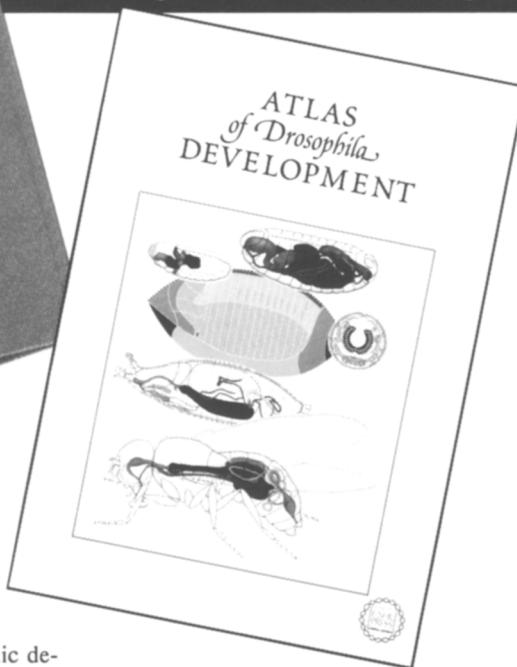
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The DEVELOPMENT of *Drosophila melanogaster*



Edited by Michael Bate, *University of Cambridge*; Alfonso Martinez Arias, *University of Cambridge*

The fruitfly *Drosophila melanogaster* offers the most powerful means of studying embryonic development in eukaryotes. New information from many different organ systems has accumulated rapidly in the past decade. This monograph, written by the most distinguished workers in the field, is the most authoritative and comprehensive synthesis of *Drosophila* developmental biology available and emphasizes the insights gained by molecular and genetic analysis. In two volumes, it is a lavishly illustrated, elegantly designed reference work illustrating principles of genetic regulation of embryogenesis that may apply to other eukaryotes. In addition, the text is complemented with a full-color Atlas for bench use, which graphically illustrates the day-by-day development of the *Drosophila* embryo.

CONTENTS

Developmental Genetics of Oogenesis (A. Spradling); Spermatogenesis (M. Fuller); Mitosis and Morphogenesis in the *Drosophila* Embryo: Point and Counterpoint (V. Foe, G. Odell, and B. Edgar); Maternal Control of Anterior Development in the *Drosophila* Embryo (W. Driever); Pole Plasm and the Posterior Group Genes (D. St Johnson); The Terminal System of Axis Determination in the *Drosophila* Embryo (F. Sprenger, C. Nüsslein Volhard); Maternal Control of Dorsal-Ventral Polarity and Pattern in the Embryo (R. Chasan, K. Anderson); Gastrulation in *Drosophila*: Cellular Me-

chanisms of Morphogenetic Movements (M. Costa, D. Sweeton, and E. Wieschaus); Blastoderm Segmentation (M. Pankratz, H. Jäckle); Development and Patterning of the Larval Epidermis of *Drosophila* (A. Martinez Arias); Development of the *Drosophila* Tracheal System (G. Manning, M. Krasnow); The Terminal Regions of the Body Pattern (G. Jürgens, V. Hartenstein); Imaginal Disc Development (S. Cohen); The Metamorphic Development of the Adult Epidermis (D. Fristrom, J. Fristrom); Hormones and *Drosophila* Development (L. Riddiford); The Alimentary Canal (H. Skaer); The Mesoderm and Its Derivatives (M. Bate); Early Neurogenesis in *Drosophila melanogaster* (J. Campos-Ortega); Embryonic Development of the *Drosophila* Central Nervous System (C. Goodman, C. Doe); The Peripheral Nervous System (Y.N. Jan, L.Y. Jan); Formation of the Adult Nervous System (J. Truman, B. Taylor, and T. Awad); Pattern Formation in the *Drosophila* Retina (T. Wolff, D. Ready); Genetic Dissection of Eye Development in *Drosophila* (B. Dickson, E. Hafen); The Development of the Optic Lobe (I. Meinertzhagen, T. Hanson); Epilogue (M. Ashburner)
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Edited by Carl W. Dieffenbach, *National Institute of Allergy and Infectious Diseases*, Gabriela S. Dveksler, *Uniformed Services University of the Health Sciences*

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PCR Primer: A Laboratory Manual introduces the complex world of PCR by beginning at an accessible level and then moving to more advanced levels of application. First, the practical requirements for performing PCR and other amplification techniques in the lab are introduced and then the basic aspects of the technique are explained by exploring important issues such as sample preparation, primer design, efficiency, detection of products, and quantitation. Protocols for a wide range of PCR and amplification techniques—each written by an expert investigator—are presented for cloning, sequencing, mutagenesis, library construction and screening, exon trapping, differential display, and expression, and these include RT-PCR, RNA PCR, LCR, multiplex PCR, panhandle PCR, capture PCR, expression PCR, 3' and 5' RACE, *in situ* PCR, and ligation-mediated PCR. Each protocol is augmented by analysis and troubleshooting sections and complete references.

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Introduction to PCR

Setting Up a PCR Laboratory (C.W. Dieffenbach et al.); A Standard PCR Protocol: Rapid Isolation of DNA and PCR Assay for β -Globin (M.T. Vahey et al.); Enzymatic Control of Carryover Contamination in PCR (J.L. Hartley, A. Rashtchian); Ultraviolet Irradiation of Surfaces to Reduce PCR Contamination (R.W. Cone, M.R. Fairfax); Specificity, Efficiency, and Fidelity of the PCR (R.S. Cha, W.G. Thilly); Optimization and Troubleshooting in PCR (K.H. Roux); Long-Distance PCR (O.S. Foord, E.A. Rose)

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embedded Tissues: Sample Preparation and the Effects of Fixation (C.E. Greer et al.); RNA Purification (J.J. Adamovicz, W.C. Gause)

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