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Titolo	From development to degeneration and regeneration of the nervous system / / edited by Charles E. Ribak ... [et al.]
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Descrizione fisica	1 online resource (xxv, 343 pages, 31 unnumbered pages of plates) : illustrations (some color)
Disciplina	612.8
Soggetti	Central nervous system - Physiology Nervous system - Degeneration Nervous system - Regeneration Neuroplasticity Central Nervous System - physiology Nerve Regeneration Neurodegenerative Diseases - physiopathology Neuronal Plasticity
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Contents; Foreword; Preface; Contributors; Part 1. Cajal's Legacy; Chapter 1: The Legacy of Cajal in Mexico; Part 2. Neuronal Migration and Development; Chapter 2: Tangential Cell Movements During Early Telencephalic Development; Chapter 3: Genetic Control of Cajal-Retzius Cell Development; Chapter 4: Development of the Paraventricular Nucleus of the Hypothalamus; Chapter 5: Neural Tube Defects: New Insights on Risk Factors; Chapter 6: Quantitative Electroencephalography in the Normal and Abnormal Developing Human Brain; Part 3. Degenerative Brain Diseases
Sommario/riassunto	This book provides current information about the three areas mentioned in the title: Neuronal Migration and Development, Degenerative Brain Diseases, and Neural Plasticity and Regeneration.

The chapters about brain development examine the cellular and molecular mechanisms by which neurons are generated from the ventricular zone in the forebrain and migrate to their destinations in the cerebral cortext. This description of cortical development also includes a discussions of the Cajal-Retzius cell. Another chapter provides insight about the development of another forebrain region, the hypothalamus. The remaining chapters of this section examine the clinical relevance of brain development in certain disease states in humans: neural tube defects and the normal and abnormal development of human electroencephalographic recordings during the first year of age. The second section on degenerative disorders of the brain begins wtih details about the dopaminergic neurons in the substantia niger and their loss in Parkinson's disease. Two subsequent chapters describe changes in brain aging, including changes in the numbers of myelinated axons. Other chapters in this section describe important cellular and molecular changes found in Alzheimer's disease and human epilepsy. Together, these chapters summarize much of our current knowledge about the major molecular and cellular changes found in several degenerative diseases of the brain. The last section addresses the issues of brain plasticity and regeneration in the adult brain and begins with a chapter on how the brain's own stem cells provide newly generated neurons to the hippocampal dentate gyrus and how these neurons become integrated into neural circuitry. The following two chapters examine some of the neuroplastic changes that take place in motor and sensory cortices of awake behaving primates. The concluding two chapters address the issue of regeneration in the injured spinal cord and the factors that may contribute to its success.