



Update of a classic

Hanno J. Bolz^{1,2}

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Book: Color Atlas of Genetics (5th edition)

Authored by: Eberhard Passarge

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Eberhard Passarge's Color Atlas of Genetics, now available in its 5th edition, covers the whole field of genetics with a focus on, but not restricted to, *human* genetics. Medical genetics has moved to the center of modern medicine of any speciality. The Color Atlas of Genetics is addressed to students of biology and medicine—and their teachers—to help conveying the essentials of genetics. Genetics is often perceived as complicated and abstract, and Passarge overcomes this effectively by a visual approach. Every text page is accompanied by color plates (of outstanding quality throughout, designed, and realized by the author in cooperation with Jürgen Wirth) on the opposite page referring to the explanatory paragraphs.

The structure of the book corresponds to the previous editions with (1) Fundamentals, (2) Genomics, and (3) Genetics in Medicine. Navigating through the atlas is very easy: The first page “At a Glance” lists all sections and included chapters, from the Introduction to the Index. The three parts are labeled by different colors, visible on the book's fore edge and hence quickly accessible.

The Introduction makes the reader familiar with basic concepts and terminology (like gene, genome etc.), provides the most important webpages and references and gives a brief history of genetics with the most important historical milestones, as both a text and a chronicle. Fundamentals (1) is extensive, covers the (cell) biological principles of

genetics and inheritance, and presents the most important analytical technologies. Genomics (2) “The study of the Organization of Genomes” is very short, but touches all important aspects including genomic evolution and also refers to genomic analyses (CGH, association studies) and genome editing (CRISPR-Cas). Genetics in Medicine (3) faces the challenge to give a comprehensive overview that necessarily needs to be selective. The “Genetic Classification of Diseases” relies to mechanisms and affected structures (genomic disorders, ciliopathies, chromatin disorders etc.). One could argue that mitochondrial disorders and channelopathies should have been placed here, too, rather than under “Imbalanced Homeostasis”, but this is a minor criticism. Cancer genetics is among the topics that are presented in particular detail in this new edition, which seems appropriate. The “Brief Guide to Genetic Diagnosis” is very useful. Gene and stem cell therapy fall a bit short; each would have deserved a single page (plus illustrations) instead of one for both—maybe this is something for the next edition. An appendix lists genes and loci for disease groups. The glossary is a very important part of this atlas. The index highlights disease names in bold: a tiny, but extremely useful detail.

It is probably fair to say that the Color Atlas of Genetics represents a standard work in genetics that is very helpful not only for students and teachers but also for every geneticist and physician taking care of patients with genetic diseases. The atlas clearly benefits from the rich lifelong experience of a renowned medical geneticist, and the inclusion of current developments keep this classic up-to-date.

Compliance with ethical standards

Conflict of interest The authors declare that he has no conflict of interest.

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✉ Hanno J. Bolz
h.bolz@senckenberg-humangenetik.de

¹ Senckenberg Centre for Human Genetics, Frankfurt/Main, Germany

² Institute of Human Genetics, University Hospital of Cologne, Cologne, Germany