

A History of Styles in Scientific Imagery

HORST BREDEK AMP is professor of art history at the Humboldt University of Berlin and a permanent fellow of the Institute for Advanced Study in Berlin.

VER A DÜNKEL is a research affiliate with the "Das Technische Bild" research project.

BIRGIT SCHNEIDER is the postdoctoral fellow of the Fritz Thyssen Foundation at the Institute for Arts and Media, University of Potsdam.

Design: Laura Grey

The University of Chicago Press, Chicago 60637 The University of Chicago Press, Ltd., London

© 2015 by The University of Chicago All rights reserved. Published 2015. Printed in the United States of America

24 23 22 21 20 19 18 17 16 15 1 2 3 4 5

ISBN -13: 978-0-226-25884-3 (cloth) ISBN -13: 978-0-226-25898-0 (e-book) DOI: 10.7208/chicago /9780226258980.001.0001 Library of Congress Cataloging-in-Publication Data

Technische Bild. English.

The technical image: a history of styles in scientific imagery / edited by Horst Bredekamp, Vera Dünkel, and Birgit Schneider. pages; cm

Includes bibliographical references.
ISBN 978-0-226-25884-3 (cloth: alk. paper)
ISBN 978-0-226-25898-0 (e-book)
1. Technical illustration. 2. Scientific
illustration. 3. Digital images. I. Bredekamp,
Horst, 1947– editor. II. Dünkel, Vera, editor.
III. Schneider, Birgit, 1972– editor. IV. Title.
T11.8.T4413 2015
604.2—dc23

2014035711

Published in association with the Bard Graduate

## Contents

## viii Foreword Peter N. Miller

1 Introduction: The Image— A Cultural Technology: A Research Program for a Critical Analysis of Images Horst Bredekamp, Vera Dünkel, Birgit Schneider

## Methods

- 8 Discourses about Pictures:
  Considerations on the
  Particular Challenges NaturalScientific Pictures Pose for
  the Theory of the Picture
  Gabriele Werner
- 14 Comparing Images
- 18 A History of Styles of Technical Imagery:
  Between Description and Interpretation
  A Conversation with
  Horst Bredekamp
- 32 Iconological Analysis
- 36 Beyond the Icons of Knowledge: Artistic Styles and the Art History of Scientific Imagery Matthias Bruhn

## Case Studies

- 48 Interacting with Images—
  Toward a History of the
  Digital Image: The Case of
  Graphical User Interfaces
  Margarete Pratschke
- 58 Digital Images
- 62 Pictorial Tradition and
  Difference—Visual
  Knowledge in Acquisition
  Science: The Case of
  Scanning Tunneling
  Microscopy
  Jochen Hennig
- 70 Chains of Representations
- 74 Thinking with Models:
  On the Genesis of James
  Watson's Molecular Biology
  of the Gene
  Reinhard Wendler
- 81 Arranging Images as Tableaux
- 86 Technological Image Series: The Project "Technik im Bild" at the Deutsches Museum, Munich Heike Weber
- 98 Observation Techniques

- 102 In the Eye of the Beholder:
  Emanuel Goldberg's
  Apparatuses at the
  International Photographic
  Exhibition Dresden 1909
  Franziska Brons
- 112 Objectivity and Evidence
- 116 X-Ray Vision and Shadow Image: On the Specificity of Early Radiographs and Their Interpretations around 1900 Vera Dünkel
- 126 Visuality, Visualizing, Imaging
- 130 Instrument-Aided Vision and the Imagination: The Migration of Worms and Dragons in Early Microscopy Stefan Ditzen
- 138 Image Noise
- 142 Programmed Images: Systems of Notation in Seventeenth- and Eighteenth-Century Weaving Birgit Schneider

- 157 Early Modern Images of Musical Automata: On Athanasius Kircher's Trompe-l'Oreille Contemplations in the Quirinal Gardens in Rome Angela Mayer-Deutsch
- 166 Popularizing Science
- 170 Drawing and the
  Contemplation of Nature—
  Natural History around
  1600: The Case of
  Aldrovandi's Images
  Angela Fischel
- 182 Bibliography
- 193 The Authors
- 195 Index