

# Darwin-Inspired Learning

**Carolyn J. Boulter**

*University of London, Institute of Education, UK*

**Michael J. Reiss**

*University of London, Institute of Education, UK*

and

**Dawn L. Sanders (Eds.)**

*Department of Pedagogical, Curricular and Professional Studies, University of Gothenburg, Sweden*

Charles Darwin has been extensively analysed and written about as a scientist, Victorian, father and husband. However, this is the first book to present a carefully thought out pedagogical approach to learning that is centered on Darwin's life and scientific practice. The ways in which Darwin developed his scientific ideas, and their far reaching effects, continue to challenge and provoke contemporary teachers and learners, inspiring them to consider both how scientists work and how individual humans 'read nature'.

Darwin-inspired learning, as proposed in this international collection of essays, is an enquiry-based pedagogy, that takes the professional practice of Charles Darwin as its source. Without seeking to idealise the man, Darwin-inspired learning places importance on:

- active learning
- hands-on enquiry
- critical thinking
- creativity
- argumentation
- interdisciplinarity.

In an increasingly urbanised world, first-hand observations of living plants and animals are becoming rarer. Indeed, some commentators suggest that such encounters are under threat and children are living in a time of 'nature-deficit'. Darwin-inspired learning, with its focus on close observation and hands-on enquiry, seeks to re-engage children and young people with the living world through critical and creative thinking modeled on Darwin's life and science.

**Paperback US\$43.40/€39.20**

**ISBN 978-94-6209-831-2**

**Hardback US\$99.00/€90.00**

**ISBN 978-94-6209-832-9**

*SERIES: NEW DIRECTIONS IN MATHEMATICS AND SCIENCE EDUCATION, VOLUME 28*

**P.T.O. FOR TABLE OF CONTENTS AND HOW TO ORDER**



**SensePublishers**

*For Wisdom and Awareness*

[www.sensepublishers.com](http://www.sensepublishers.com)

Peter de Liefde – [peter.deliefde@sensepublishers.com](mailto:peter.deliefde@sensepublishers.com)

Michel Lokhorst – [michel.lokhorst@sensepublishers.com](mailto:michel.lokhorst@sensepublishers.com)



# TABLE OF CONTENTS

## Foreword

*Rosemary & Peter Grant*

## Acknowledgements

## Open Window

*Ruth Padel*

## Introduction: Darwin-Inspired Learning

*Michael J. Reiss, Carolyn J. Boulter & Dawn L. Sanders*

## Darwin's Heritage

### 1. Entering Darwin's Life

*Randal Keynes*

### 2. The World of Downe: Charles Darwin's Living Laboratory

*Dawn L. Sanders*

### 3. 'Pester Them with Letters': Using Darwin's Correspondence in the Classroom:

The Darwin Correspondence Project

*Sally Stafford*

## Developing a Sense of Place

### 4. Learning in Cultivated Gardens and Other Outdoor Landscapes

*Paul Davies, Dawn L. Sanders & Ruth Amos*

### 5. Learning to Read Nature to Understand the Natural World and How It Works

*Ola Magntorn*

### 6. Walking with Darwin in Rio de Janeiro: Learning about Cultural and Historical Values

*Sandra Escovedo Selles*

### 7. Getting the Kids Involved – Darwin's Paternal Example

*James Moore*

### 8. Using Collections of Darwiniana in Darwin-Inspired Learning

*Ruth Barlow*

## The Importance of Active Hands-on Enquiry

### 9. Object Lessons in Evidence-Based Learning

*Mike Corbishley*

### 10. Sailing the Backyard *Beagle*: Darwin-Inspired Voyages of Discovery in Backyard and Schoolyard

*James T. Costa*

### 11. Naming the Living World: From the Infant's Perception of Animacy to a Child's Species Concept

*Stephen P. Tomkins & Sue Dale Tunnicliffe*

### 12. Scientific Enquiry: Searching for and Interpreting Evidence to Construct Arguments

*Shirley Simon*

### 13. Using Darwin to Teach Earth Science: The Importance of Hands-on Enquiry: The Development of the Darwin Workshop Methodology

*Peter Kennett & Chris King*

## Critical Thinking about What and How we Know

### 14. Darwin the Scientist: Working Scientifically

*James D. Williams*

### 15. Teaching Evolution in Schools: A Matter of Controversy?

*Ralph Levinson*

### 16. The 'Attentive and Reflective Observer': Darwin-Inspired Learning and the Teaching of Evolution

*Neil Ingram*

### 17. Darwinian Case Studies Within a Post-16 Programme for the History and Philosophy of Science: The Perspectives on Science Course

*John L. Taylor*

### 18. They Really do Eat Insects: Learning from Charles Darwin's Experiments with Carnivorous Plants

*Aaron M. Ellison*

### 19. DNA Barcoding Darwin's Meadow: A Twenty-first-century Botanical Inventory at Historic Down House

*Karen E. James*

## Interdisciplinary Studies

### 20. Darwin's Barnacles: Learning from Collections

*Miranda Lowe & Carolyn J. Boulter*

### 21. Darwin-Inspired Drama: Towards One Culture in Teaching and Learning Science

*Martin Braund*

### 22. Evolutionary Narratives: Darwin's Botany and US Periodical Literature

*Tina Gianquitto*

### 23. Darwin in Natural Science School Textbooks in the Nineteenth Century in England and Spain

*Margarita Hernández-Laille*

## Developing Work with Learners

### 24. Writing and Representing to Learn in Science

*Vaughan Prain*

### 25. Routes to Conceptual Change in Teaching and Learning about Evolution: Experiences with Students Aged between 11 and 16 Years

*Emma Newall*

### 26. Developing a Model for Post-16 Teaching and Learning

*Carolyn J. Boulter & Emma Newall*

### 27. Transformation of the School Grounds for Darwin-Inspired Learning

*Susan Johnson*

### 28. Transition: Darwin-Inspired Learning Approaches at Crucial Junctures in Science Education

*Susan Johnson*

### 29. Staging Darwin's Science through Biographical Narratives

*Dawn L. Sanders*

## Epilogue: Transforming the Ordinary

*Dawn L. Sanders, Carolyn J. Boulter & Michael J. Reiss*

## About the Contributors

## Index

## Please send me

\_\_ copy(ies) Boulter, Reiss and Sanders: Darwin-Inspired Learning

\_\_ copy(ies) Boulter, Reiss and Sanders: Darwin-Inspired Learning

**Paperback:** US\$43.00 / €39.00

**Hardback:** US\$99.00 / €90.00

## Total amount

*Costs for shipping to be added depend on quantity ordered and final destination. For further details please see the link on our website:*

<https://www.sensepublishers.com/terms/>

Visa

Card. no.: \_\_\_\_\_

Mastercard

Expiry Date: \_\_\_\_\_

Eurocard

CVC: \_\_\_\_\_

Name as on Card: \_\_\_\_\_

Organization: \_\_\_\_\_

Department: \_\_\_\_\_

Address: \_\_\_\_\_

Postal Code: \_\_\_\_\_

City: \_\_\_\_\_

Country: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

Date: \_\_\_\_\_

VAT: \_\_\_\_\_

Signature: \_\_\_\_\_

## To be sent to

Sense Publishers

Order Dept., P.O. Box 21858

3001 AW Rotterdam, The Netherlands

**Email:** [edwinbakker@sensepublishers.com](mailto:edwinbakker@sensepublishers.com)

**Fax:** 0031787070632

Sense Publishers

Order Dept. P.O. Box 51907

Boston, MA 02205

**Email:** [paul.chambers@sensepublishers.com](mailto:paul.chambers@sensepublishers.com)

**Fax:** 781-335-1676